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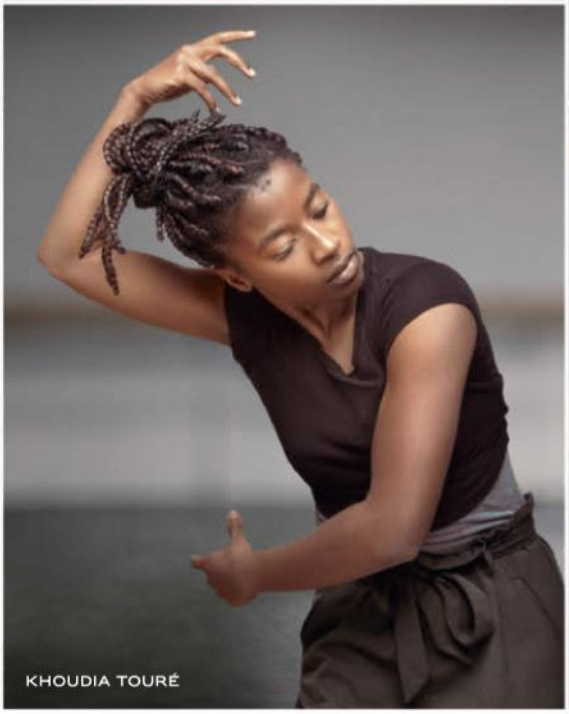
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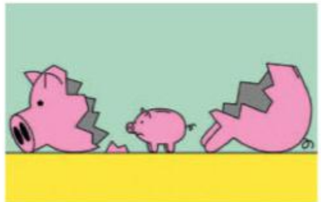

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The Economist

Volume 445 Number 9325

Published since September 1843
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Editorial offices in London and also:
Amsterdam, Beijing, Berlin, Brussels, Chicago, Dakar, Dallas, Dubai, Johannesburg, Madrid, Mexico City, Moscow, Mumbai, New Delhi, New York, Paris, San Francisco, São Paulo, Seoul, Shanghai, Singapore, Tokyo, Washington DC

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China began dismantling its "zero-covid" policy, which was struggling to contain the Omicron variant and had become a source of widespread frustration. The state will no longer force people with mild cases to enter government-run quarantine centres. They can now isolate at home. It also lifted many testing requirements and said lockdowns should be more targeted. The changes come as the official number of new cases is falling. That is probably because fewer people are being tested. Anecdotal evidence suggests that the Omicron variant is spreading.

Unsafe sex

Indonesia's legislature passed a sweeping new criminal code that outlaws sex outside marriage, making it punishable by a stiff prison sentence. President Joko Widodo has not signed the new code into law, but has suggested he will. It applies to foreigners as well as locals. It also makes it illegal for Indonesians to leave their religion or persuade anyone to be a non-believer.

The Taliban regime in **Afghanistan** carried out its first public execution since returning to power last year. A man was shot for murder (by the victim's father) in front of a stadium crowd that included the government's justice minister. Judges have recently been ordered to adhere closely to sharia law. Human-rights groups fear a return to the public mass executions and floggings of the 1990s.

As Russia pounded **Ukraine** with more missiles, aiming to knock out critical infrastructure as winter deepens, Ukraine struck back. Two large explosions were reported at a pair of Russian air bases several hundred kilometres from the border. It is thought that the attacks, which damaged aircraft, were carried out by Ukrainian drones, but it is unclear why Russia had been unable to stop them.

Volodymyr Zelensky, Ukraine's president, said that the price cap set by the G7 and EU on **Russian oil** was too high to inflict real damage on the Russian economy and called for tougher action. The allies have imposed a cap of $60 a barrel, about the same as the price paid anyway for oil pumped from the Urals.

Latvia's media regulator ordered TV Rain, an independent Russian channel that operates from Latvia, to shut down. TV Rain was fined for depicting Crimea as part of Russia and criticised for being too sympathetic to Russian conscript troops. It says it is against the war. Most of its viewers watch it on YouTube anyway, where it will continue to operate.

Police in **Germany** arrested around 25 people who are suspected of planning to carry out an armed coup and replace the government with a council headed by a minor aristocrat. Far-right extremism has become a significant problem in Germany in recent years.

Israel's prime minister-designate, Binyamin Netanyahu, clinched the support of enough parties in the Knesset to form a government. The emerging coalition is likely to include two far-right parties, including one led by Itamar Ben-Gvir, who may get a newly created post as national security minister.

China's leader, Xi Jinping, arrived in **Saudi Arabia** to meet the leaders of the kingdom and a string of bigwigs from across the Arab world. America is nervous that China, which is investing heavily in the Gulf, is seeking to displace it as the region's key partner.

Meanwhile, an American federal court dismissed a lawsuit against Saudi Arabia's crown prince and de facto ruler, **Muhammad bin Salman**, who had been accused of ordering the murder of a Saudi dissident journalist, Jamal Khashoggi, in 2018. It said he had immunity as a head of government, a decision that came as a relief to the American administration.

Sudan's military rulers reached a deal with pro-democracy leaders to establish a civilian-led government that will manage a transition to democracy. A previous power-sharing agreement struck after a coup in 2019 fell apart after a second putsch last year.

South Africa's president, Cyril Ramaphosa, asked the country's highest court to throw out the findings of a panel appointed by Parliament, which alleged enough evidence of misconduct to consider impeaching him. The panel was investigating the source of at least $580,000 that had been hidden in, and then stolen from, his sofa.

Ndambi Guebuza, the son of **Mozambique's** former president, Armando Guebuza, was sentenced to 12 years in prison over a $2.2bn debt-and-corruption scandal.



Pedro Castillo was removed from office as president of **Peru** by Congress, just hours after he tried to shut down the legislature. The 16-month term of Mr Castillo, a leftist, was marked by chaotic government and corruption. Dina Boluarte, the vice-president, was sworn in as president. She referred to her former boss's attempt to dissolve Congress as a coup attempt, though the army did not support him. Mr Castillo was nevertheless arrested.

Cristina Fernández de Kirchner, the vice-president of **Argentina**, was found guilty of corruption and sentenced to six years in jail. Ms Fernández denies that she steered public contracts to a family friend. She called the judiciary "a mafia" and dared officials to arrest her. She is unlikely to go to prison; the case will probably end up in the Supreme Court.

Mexico's president, Andrés Manuel López Obrador, came a step closer to realising his pet project when the lower house of Congress approved proposals to slim down the country's electoral body. Opponents say the changes, which will probably be approved by the Senate, will weaken democracy.

Raphael Warnock held on to a Senate seat in **Georgia** for the Democrats in a run-off election. His victory means the party will have a 51-49 advantage in the Senate when Congress convenes in January.

Happy Christmas!

During December **Britain** is expected to lose the most days to strikes in a month since 1989. Railway workers are walking out for several days; an overtime ban will be in force over the holiday period. Nurses, postal workers, ambulance drivers and airport staff are among those downing tools. The disruption may spread further, as the cost-of-living crisis bites and more unions reject below-inflation pay deals.

It is not just Britain that is experiencing a winter of discontent. Staff at the **European Central Bank** rejected a pay offer that fell well short of inflation and are considering industrial action. The ECB is at least consistent. It has argued in favour of pay restraint to keep inflation subdued.



Meta's oversight board recommended that the company review its procedures on handling content from celebrities and politicians, following revelations that harmful content that is posted by the rich and famous is often allowed to stay online, contravening the rules for other users. The board told Facebook's owner that it "should prioritise expression that is important for human rights". Separately, **Facebook** threatened to remove news content from its American site if legislation demands that it pay news organisations for the use of their material. Facebook prefers to make its own deals.

Foxconn on the run

Foxconn reported a sharp drop in revenue for November, which is normally a boom time for the electronics contract manufacturer. It noted the impact that covid-19 restrictions have had on its hub in Zhengzhou, where workers have clashed with security guards over their conditions and walked out after being told they would be locked in.

In what it described as one of the largest-ever foreign direct investments in the United States, **Taiwan Semiconductor Manufacturing Company** announced that it would build a second chip factory in Arizona, taking the amount it is spending on both plants to $40bn. TSMC makes Apple's semiconductors for the iPhone and other devices, which can now "be proudly stamped Made in America", said Tim Cook, Apple's chief executive.

As it accelerated plans to guarantee the supply chain for its chips, Apple's ambitions to build an **electric vehicle** went into reverse. The company has reportedly pushed back the launch date to 2026, and has encountered technical problems that mean the car will only be able to handle self-driving tasks on motorways.

The International Energy Agency said that the expansion of **renewable energy** will happen at a much faster rate over the next five years than was thought likely a year ago, and that Russia's war in Ukraine marks a "turning point" for the transition to clean energy in Europe. It forecast that renewables as a whole will overtake coal in 2025 to become the biggest source of the world's electricity generation. Half of the new renewable capacity will be in China.

The market for renewables is growing, but so is demand for coal as countries look for short-term fixes to tackle an energy crunch. Britain has approved the first deep **coal mine** in 30 years, to supply coking coal to steelmakers. Germany recently boosted its coal-power capacity to secure energy supply over the winter.

OPEC+ agreed to keep oil output levels steady, but said it was ready to take immediate action to "address market developments" should they arise. The meeting was held the day before a price cap and embargo on Russian oil came into force and was the last scheduled full gathering of the oil cartel until June next year.

The global **airline industry** should return to profitability in 2023, according to the International Air Transport Association. It reckons total net profits will come in around $5bn, still some way below the $26bn racked up in 2019. Net losses this year will be some $7bn, a big improvement on the $42bn lost by airlines in 2021 and the $138bn in 2020.

An activist investment fund with a small stake in **BlackRock** has called for Larry Fink to step down as chief executive, over his "contradictions" on environmental, social and governance investments. BlackRock is a pioneer of ESG policy in the financial industry, but has been accused of greenwashing for withholding support from many ESG shareholder proposals.

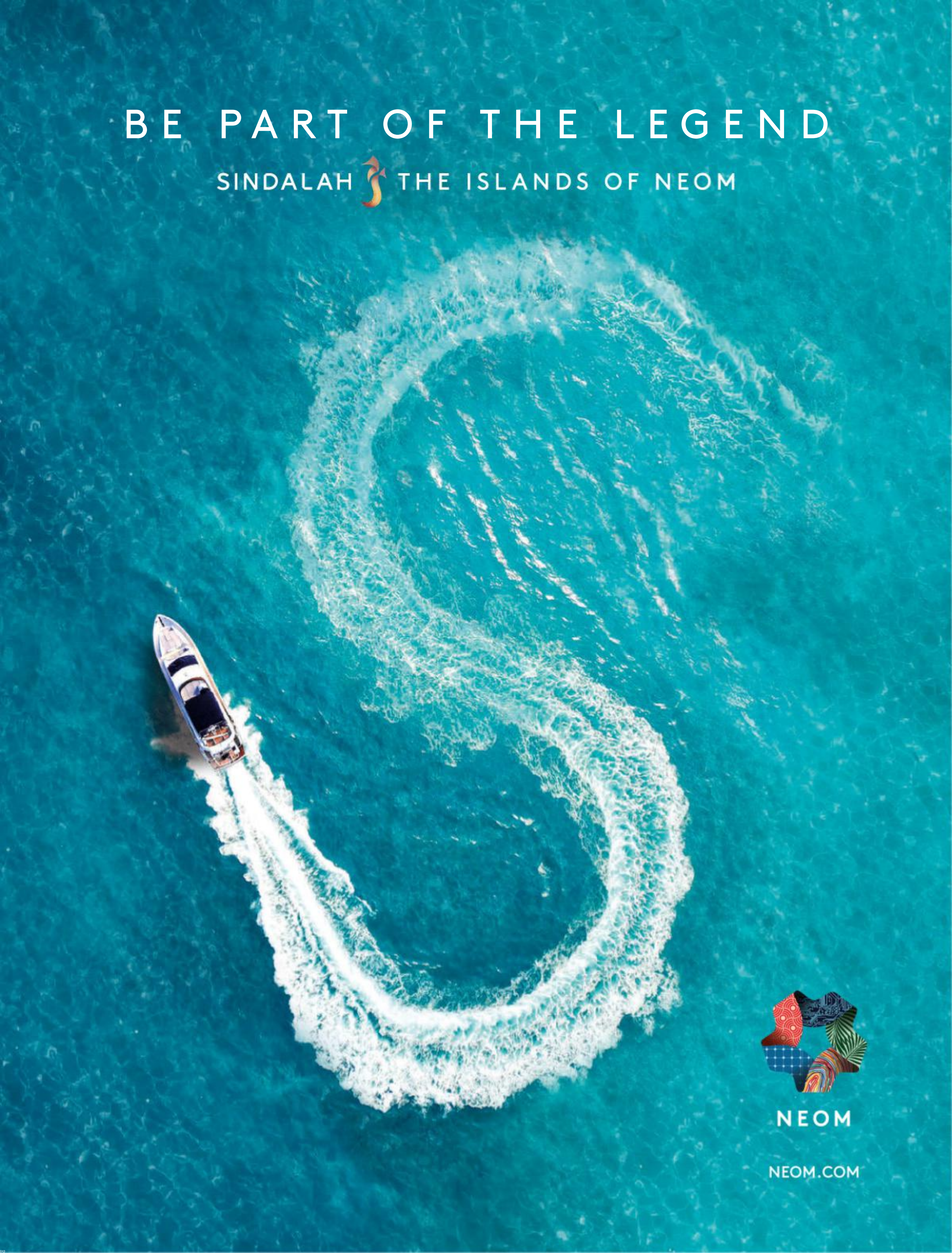
Neuralink, one of Elon Musk's ventures, is being investigated by the American government for violating animal welfare, according to reports. The secretive firm uses monkeys, pigs and sheep in the development of its brain-computer interfaces. Many are killed, but employees are concerned that some testing is rushed, leading to unnecessary suffering for the animals.

Bankman-Fried to be grilled

Sam Bankman-Fried, the founder of FTX, said he will testify to Congress about the collapse of his crypto exchange, but that he hadn't finished reviewing the events that led to its bankruptcy and might not be ready to attend a hearing on December 13th. The crypto industry continues to feel the after-effects of FTX's collapse. Orthogonal Trading, a crypto hedge fund, was the latest to default on a loan.

Microsoft's president, Brad Smith, said his company had made an offer to Sony to allow **"Call of Duty"** on PlayStation consoles if Microsoft wins approval to take over Activision Blizzard, which owns the game series. Microsoft also signed a deal with Nintendo to allow the game on its consoles. Mr Smith noted that Sony is the "loudest objector" to its takeover: "It's as excited about this deal as Blockbuster was about the rise of Netflix."




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The new rules

Investing in an era of higher interest rates and scarcer capital

Welcome to the end of cheap money. Share prices have been through worse, but only rarely have things been as bloody in so many asset markets at once. Investors find themselves in a new world and they need a new set of rules.

The pain has been intense. The S&P 500 index of leading American shares was down by almost a quarter at its lowest point this year, erasing more than $10trn in market value. Government bonds, usually a shelter from stocks, have been blasted: Treasuries are heading for their worst year since 1949. As of mid-October, a portfolio split 60/40 between American equities and Treasuries had fallen more than in any year since 1937. Meanwhile house prices are falling everywhere from Vancouver to Sydney. Bitcoin has crashed. Gold did not glitter. Commodities alone had a good year—and that was in part because of war.

The shock was all the worse because investors had become used to low inflation (see Briefing). After the global financial crisis of 2007-09, central banks cut interest rates in an attempt to revive the economy. As rates fell and stayed down, asset prices surged and a "bull market in everything" took hold. From its low in 2009 to its peak in 2021, the S&P 500 rose seven-fold. Venture capitalists wrote ever bigger cheques for all manner of startups. Private markets around the world—private equity, as well as property, infrastructure and private lending—quadrupled in size, to more than $10trn.



This year's dramatic reversal was triggered by rising interest rates. The Federal Reserve has tightened more quickly than at any time since the 1980s, and other central banks have been dragged along behind. Look deeper, though, and the underlying cause is resurgent inflation. Across the rich world, consumer prices are rising at their fastest annual pace in four decades.

This era of dearer money demands a shift in how investors approach the markets. As reality sinks in, they are scrambling to adjust to the new rules. They should focus on three.

One is that expected returns will be higher. As interest rates fell in the bull years of the 2010s, future income was transformed into capital gains. The downside of higher prices was lower expected returns. By symmetry, this year's capital losses have a silver lining: future real returns have gone up. This is easiest to grasp by considering Treasury Inflation-Protected Securities (TIPS), which have yields that are a proxy for real risk-free returns. Last year the yield on a ten-year TIPS was minus 1% or lower. Now it is around 1.2%. Investors who held those bonds over that period have suffered a hefty capital loss. But higher TIPS yields mean higher real returns in future.

Obviously, no law dictates that asset prices which have fallen a lot cannot fall further. Markets are jumpy as they await signals from the Fed about the pace of interest-rate rises. A recession in America would crush profits and spur a flight from risk, driving down share prices.

However, as Warren Buffett once argued, prospective investors should rejoice when stock prices fall; only those who plan to sell soon should be happy with high prices. Nervous or illiquid investors will sell at the bottom, but they will regret it. Those with the skill, nerve and capital will take advantage of the higher expected returns and thrive.

The second rule is that investors' horizons have shortened. Higher interest rates are making them impatient, as the present value of future income streams falls. This has dealt a blow to the share prices of technology companies, which promise bountiful profits in the distant future, even as their business models are starting to show their age. The share prices of the five biggest tech firms included in the S&P 500, which make up a fifth of its market capitalisation, have fallen by 40% this year.

As the scales tilt from newish firms and towards old ones, seemingly burnt-out business models, such as European banking, will find a new lease of life. Not every fledgling firm will be starved of funding, but the cheques will be smaller and the cheque-books brandished less often. Investors will have less patience for firms with heavy upfront costs and distant profits. Tesla has been a big success, but legacy carmakers suddenly have an edge. They can draw on cashflows from past investments, whereas even deserving would-be disrupters will find it harder to raise money.

The third rule is that investment strategies will change. One popular approach since the 2010s has blended passive index investing in public markets with active investing in private ones. This saw vast amounts of money flow into private credit, which was worth over $1trn at its peak. Roughly a fifth of the portfolios of American public pension funds were in private equity and property (see Finance & economics section). Private-equity deals made up about 20% of all mergers and acquisitions by value.

One side of the strategy looks vulnerable—but not the part that many industry insiders are now inclined to reject. To its critics, index investing is a bust since tech companies loom large in indices, which are weighted by market value. In fact, index investing will not disappear. It is a cheap way for large numbers of investors to achieve the average market return.

Where to worry

It is those high-fee private investments that deserve scrutiny. The performance of private assets has been much vaunted. By one estimate private-equity funds globally marked up the value of the firms they own by 3.2%, even as the S&P 500 shed 22.3%.

This is largely a mirage. Because the assets of private funds are not traded, managers have wide discretion over the value they place on them. They are notoriously slow in marking these down, perhaps because their fees are based on the value of the portfolio. However, the falling value of listed firms will eventually be felt even in privately owned businesses. In time, investors in private assets who thought they had avoided the crash in public markets will face losses, too.

A cohort of investors must get to grips with the new regime of higher interest rates and scarcer capital. That will not be easy, but they should take the long view. The new normal has history on its side. It was the era of cheap money that was weird. ■

China and covid-19

What is the plan?

China is loosening its covid restrictions, at great risk

Does China still have covid-19 under control? In keeping with its flawed recent handling of the virus, the answer is surely that it does not. The official tally of cases is falling, but that is probably because people are being tested less often. Not long ago the aim was to suppress every infection chain. Today social media suggest that an alarming and rapidly growing number of Chinese people know someone who has caught the disease.

If the virus is indeed spreading, watch out. Once Omicron gets going, it burns through a population like a forest fire. It may now move especially fast in China, because the virus is transmitted more easily during winter. Next month millions will return to their villages and hometowns to celebrate the lunar new year. Many could take covid with them even if they have no symptoms.



Given that China was already struggling to contain the disease, this is an odd time to loosen restrictions. Other once-isolated places, such as Singapore and Taiwan, prepared for a spike in cases by administering vaccines, stockpiling antiviral drugs and expanding intensive-care units (ICUs); only then did they gradually open up. China seems to be throwing precaution to the winds. On December 7th it eased its controls by, for example, lifting test requirements for most public venues and letting people with mild infections isolate at home rather than in state-run centres (see China section). If the government has a plan to avoid the surge of infections and deaths this could bring, nobody can say what it is—indeed, the lack of clarity alone would severely undermine it.

The easing comes amid mounting public pressure, a sign that the government could not indefinitely sustain its excessively harsh zero-covid policy. For two years this let most Chinese enjoy a normal, virus-free existence and kept the economy humming. The spread of Omicron, though, meant that more and more people had become ensnared in the government's controls. The economy was suffering. Frustration boiled over last month, when protests occurred in cities across the country.

A more accountable government might have acknowledged its errors while laying out the steps needed to leave zero-covid gradually, when life-saving measures were in place. But Xi Jinping and the Communist Party are rushing ahead, ready or not.

All signs point to not. The country has too few ICU beds to handle a big outbreak. It has not trained enough medical staff, nor adopted protocols on which patients to treat and where. Most important, only 40% of those aged over 80 have received three doses of local vaccine, the amount needed to provide good protection against severe disease and death. A new campaign to jab the old was announced late last month. But it needs time.

Officials and state media have begun telling people that Omicron is fairly harmless, no worse than the common cold. In a country where the government long stoked fear of the virus, this is jarring. It is also disingenuous. Although Omicron is milder than previous variants, it can still be deadly—especially in a population that has not acquired immunity through infection, as Hong Kong discovered when many elderly died during an outbreak in the spring.

This raises the troubling prospect that the party will cover up the true number of covid deaths (see Chaguan). It may also blame local officials, who have been handed an impossible task of easing restrictions while managing case numbers. They, like us, may be asking: is this really the plan? ■

Italy and Europe

Crying out for reform

Giorgia Meloni needs to be bold. Sadly, she appears reticent

At first blush Italy, the euro area's third-biggest economy, seems to be doing well in a continent beset by gloom. This year it has grown faster than both France and Germany. The big chunk of money it secured from the EU's post-covid recovery fund is beginning to arrive, and that is meant to bring more of the pro-growth reforms that Brussels has insisted on for every tranche it pays out. Fears in some quarters that Italy's new right-wing prime minister, Giorgia Meloni, would reverse the progress made by Mario Draghi, her predecessor—progress that led this newspaper to choose Italy as its country of the year in 2021—have so far proved unfounded.

However, optimism runs only so deep. Italy's long-term performance remains lamentable. Its near-zero growth in GDP per head since 2000 is the worst in the OECD club of rich countries, and it is forecast to be in recession in 2023. This record, along with its huge public-sector debt, makes Italy potentially the single currency's most vulnerable member. For the sake of Italy and Europe, much of which shares similar ailments, Ms Meloni's government must take radical action to pep up the economy.

The most important task is to do more to promote competition and so to enhance productivity. Mr Draghi's government made a start. But Ms Meloni must do a lot more, first to implement his legislative changes and next to overcome the entrenched vested interests that always resist pro-growth reforms in Italy. Rigid labour markets need further liberalisation to reduce youth unemployment and raise female participation in the workforce. Protected service providers should be opened to more competition. The public administration, the judicial system and education all need a thorough shake-up to move faster and perform better. Other countries in Europe have done some ▸▸

of this, if not yet enough. But Italy has to do more than most.

Another problem that much of Europe also shares is a growing inter-generational divide. Italy's population is ageing and shrinking and other EU countries are destined to follow. One malign consequence is the rising political clout of the old. After a partial reversal of earlier pension reforms, Italy spends almost five times as much on pensions as on educating the young. Its labour market favours the old on permanent contracts over the young on temporary ones. Whether in business or professional services, in politics or universities, or in the ownership of property and other assets, the system in Italy seems almost designed to engineer a gerontocracy that chiefly looks after the old and comfortable. Pensioners who vote are coddled by politicians all round Europe, but their power is especially obvious in Italy.

A final problem is rising regional inequality. Much of Europe worries about a gap between successful metropolises and smaller towns and regions that lag behind (see Britain leader). Yet Italy's south, the *mezzogiorno*, stands out because of its size (a third of the population, a quarter of the economy) and because over the past two decades it has been falling further back. From education to employment and from the shadow economy to corruption and organised crime, the *mezzogiorno* suffers from greater failings than the rest of Italy. And, rather as the euro area as a whole cannot do a lot better unless Italy does better, so Italy itself cannot thrive without improving its south.

Italy can oversee positive change, as can the euro area as a whole. Many small manufacturing firms in its north are thriving exporters, just as there are many successful exporters in Germany, France or the Netherlands. Like much of the rest of Europe, Italy is strong in food, fashion, design, culture and tourism, all candidates to be among the growth industries of tomorrow. But excessive regulation, the protection of incumbents and barriers to competition hold back growth and productivity.

When in Rome

Ms Meloni has a chance to make a big difference and much is riding on whether she can do better. So far she is broadly sticking to EU-backed reforms. Yet as our special report in this issue argues, her instincts too often seem to be not to promote freer markets and more liberalisation, but to insulate Italian assets from foreign competition and to protect small traders and service providers, from taxi drivers to shopkeepers to beach concessionaires. If she does not strive for deeper reforms, Italy's problems are likely only to get worse. ■

Canada

Charter fights

A clause in Canada's constitution lets politicians nullify citizens' rights. It needs to go

For those who nod off at the mention of Canada's constitution, the obscure-sounding "notwithstanding clause" will surely induce lethargy. But populists are increasingly taking advantage of this apparently innocuous article in the country's Charter of Rights and Freedoms (see Americas section). Canadians should wake up and scrap the clause entirely.

Canada gained full control of its constitution as recently as 1982, in the era of boxy shoulder pads and Michael Jackson's "Thriller", as part of its "patriation" from Britain. The charter is central to it, as it codifies the rights that Canadians are entitled to. Pierre Trudeau, then the prime minister, reluctantly inserted the notwithstanding clause—otherwise known as Section 33—at the behest of the western provinces, because their premiers feared that their autonomy would be eroded by the augmented powers of the courts under the charter.



Section 33 allows governments to suspend some of their citizens' basic rights, such as freedom of religion; freedom of thought, belief and expression; and the right of peaceful assembly. Although would-be autocrats could not curb the right to vote, they could use the clause to muzzle the press, arbitrarily arrest people or close places of worship. No other constitution contains such an expansive weapon.

The clause was long considered a nuclear option. But now high-handed governments in Quebec and Ontario are using it with abandon. In 2019 François Legault, the conservative premier of Quebec, invoked it when introducing a law to ban public servants from wearing religious symbols. This year his government applied it to push through a law further restricting the use of languages other than French in the workplace. Worryingly, the clause was also used to give a language-enforcement agency powers to conduct searches without a warrant, to ensure that *la belle langue* is being used in all written communication.

Doug Ford, the Conservative premier of Ontario, used Section 33 last year for the first time in the province's history to pass a law that imposes restrictions on election-campaign advertising by organisations other than political parties. This was seemingly to boost Mr Ford's chances of re-election this year, as the law curbed advertising from trade unions, or from those who could have criticised his record on dealing with covid-19. In October Mr Ford invoked Section 33 again, this time to help pass legislation that would have violated workers' rights to bargain collectively. The law was repealed after the unions threatened a general strike.

Section 33 is not the only tool that provincial bosses are wielding in Canada, a country long considered a liberal beacon. On November 29th the Conservative government of Alberta introduced a bill that would let its government refuse to enforce federal laws if the legislature decided they were unconstitutional or caused "harm to Albertans".

Indeed, Justin Trudeau, the prime minister, is tempted by illiberal overreach. Earlier this year he used, for the first time, a draconian Emergencies Act to shut down a protest by lorry drivers in Ottawa, the capital. The notwithstanding clause is all the more dangerous in such a bare-fisted legislative climate.

Ideally, Section 33 would be scrapped. If that proves impossible, the Supreme Court should limit its use. Even in a country with the deep democratic instincts of Canada, it is naive to assume that a constitutional loophole will not be abused in defiance of fundamental freedoms. ■

Britain's economy

Free the north

Fire up Britain's economy by invigorating its second-tier cities

MANCHESTER HAS plenty of swagger. It has the best team in club football, and is also home to Manchester United. Cranes dot the city centre. Its mayor, Andy Burnham, is the most recognised in the country, beating his counterparts in London and the West Midlands. Yet the cockiness disguises a big problem, for the city and for Britain. The Manchester urban area contains 3.4m people, making it about as populous as Amsterdam, Hamburg and San Diego. But its GDP per head at purchasing-power parity is at least a quarter lower than all three, and stuck at about 90% of the average in Britain itself.

As with Manchester, so with Tyneside, Birmingham and other conurbations in the Midlands and north of England. Second-tier cities in most countries have productivity that matches or exceeds the national average; a pre-pandemic analysis by the OECD of 11 British second-tier cities, mostly in the north of England, found that gross value-added per worker was 86% of the British average. London is as rich as Paris, but metropolitan Birmingham or Leeds is nowhere near as rich as Lyon or Toulouse.

No one should be happy about this lopsided picture, whether proud northerner or smug southerner. The country's long-running growth problem cannot be solved—more to the point, has not been solved—by one superstar metropolis.

These huge imbalances in Britain's economic geography have not gone unnoticed. In the 2010s George Osborne, then chancellor of the exchequer, promoted the idea of a northern powerhouse. Boris Johnson put promises to tackle regional inequality at the heart of his 2019 election campaign. Gordon Brown, a former Labour prime minister, highlighted the problem in a set of proposals for constitutional reform this week (even if proposals to remake Parliament hogged all the attention). But diagnosis is plainly not the same as cure.



It is true that Britain's second-tier cities face some deep-rooted challenges. Manchester and other post-industrial spots share several ailments—poor health, labour-force scarring, too few people and jobs in their centres. But they could achieve so much more if politicians got a few relatively simple things right.

One is to focus on big conurbations, not towns. Some politicians persist in thinking that smaller places need lots of attention. Mr Johnson's "levelling-up" agenda included a multi-billion-pound Towns Fund; Treasury workers are being moved to Darlington, a place with 108,000 people in north-eastern England that happens to be next to the constituency of Rishi Sunak, the prime minister. Invigorating metropolises has a far bigger impact; Greater Manchester is home to almost one in five people living in the north of England. And successful conurbations pull surrounding towns up. Britain needs several engines to fire, but they have to be big.

A second priority is to rebalance public investment away from London. Between 2000 and 2019, the government devoted £10,000 ($12,160) per Londoner to economic development, science and technology, and transport. The equivalent figure for residents in the north-east and north-west hovered at around £5,000. There is a rationale for this: productive places generate higher returns on investment. But it is a recipe for entrenching the skew between the capital and the rest. And the Treasury has approved southern schemes, such as upgrading London's Thameslink railway, with low benefit-cost ratios.

The third and most important priority is to devolve fiscal control. Cities must go cap in hand to Whitehall for much of their money. Only 6% of tax revenue in Britain is collected by local government, a large chunk of it for social care. That is a tiny share in comparison with others. Combine local and regional taxes, and France is on 14%, Germany 32% and America 36%.

Worse, much of the money available to cities is in the form of pots for which they are invited to bid. These pots are numerous and often piddling. Civil servants sit in Whitehall, weighing applications for cash to run adult-numeracy programmes and to build public toilets hundreds of miles away. Officials in Greater Manchester are currently handling more than 110 grants from 15 government departments. The result is colossal inefficiency, especially when policies change—as they do, a lot. Officials wasted many hours this year preparing bids for investment zones, a wheeze of Liz Truss's brief administration.

This system also distorts decision-making. Cities define their needs in order to fit available grants. When there is money for sprucing up high streets, cities decide they must do that; when there is money for buses, everyone develops a bus obsession. Ministers in London may be tempted to dole out largesse for political ends. A report in 2020 by the Public Accounts Committee, a parliamentary body, was suspicious of how recipients of levelling-up grants were chosen; one town that got money was 535th out of 541 in the priority list.

Mr Brown has some good ideas for tackling these problems, such as consolidating funding streams from Whitehall. But neither Labour nor the Tories have embraced the obvious prescription: give metropolises the power to raise much more money locally and spend it on what they need. Ideally this revenue would be in the form of property taxes, which are too low and are based on out-of-date valuations. Cities will develop an appetite for building if more of the proceeds come their way.

Britain's northern lites

They need more freedom, too. Greater Manchester has been allowed to plan for housing and office development at metropolitan scale, and is making a good go of it. Other metropolises are still denied that power. Mr Burnham is also being allowed to unpick one of Margaret Thatcher's less wise reforms, in which buses outside London were privatised and deregulated. But it was a hell of a fight, and required a court case.

Freer cities will inevitably make mistakes. More local revenue-raising risks widening the gap between the poorest and richest places; a mechanism for redistributing money that does not squelch all incentives to develop will be needed. But Britain's economy cannot keep relying so heavily on London. And its second-tier cities cannot thrive unless they have more control of their destinies. Time to free the north. ■

Executive Vice President

GLOBAL TRADE BANK (EVP GTBA)

African Export-Import Bank (Afreximbank)

AFREXIMBANK

TheWillisPartnership
Executive Search Consultants

The Company

African Export Import Bank (the "Bank") was established in October 1993 by a treaty signed and ratified by African Governments. Its shareholders are African Governments and/or their Central Banks financial institutions and private investors. Established as a multilateral organisation, its purpose is the financing, promotion, facilitation and expansion of intra-African and extra-African trade. With headquarters in Cairo, Egypt, the Bank has branch offices in Abidjan, Abuja, Harare, Kampala, and Yaoundé. In recent years, the Bank has experienced considerable growth. To build on this success, it is now implementing its 6th Strategic Plan covering the period 2022 – 2026. The plan is based on four Strategic Pillars namely: Intra-African Trade & AfCFTA implementation; Industrialisation & Export Development; Leadership in Global Trade Banking in Africa; and Financial Sustainability. One of these Strategic Pillars is being established as a Division within the Bank, known as the Global Trade Bank ("GTBA").

The Bank has engaged the Willis Partnership to assist them with the recruitment of an Executive Vice President to provide leadership and strategic direction for the Global Trade Bank.

The Role

Based in Cairo, Egypt and reporting to the President & Chairman of the Board of Directors, the Executive Vice President, GTBA Bank ("EVP GTBA Bank") is a member of the Bank's Executive Management Forum (EXMAF) and is responsible for leading and developing a team of high-achieving professionals to manage a large and diverse portfolio of about USD 10 billion per year across Africa. They will be expected to develop and implement strategies to boost Africa's trade with the world including access to trade finance across the full spectrum of products and services. These include short-term products, such as import and export finance and other specialised trade finance facilities, including structured trade finance, forfaiting, factoring & supply chain finance, commodities finance, advisory, derivatives, trade services, letters of credit, and guarantees & correspondent banking. The EVP GTBA will also supervise syndications and overall asset distribution.

The EVP GTBA will spearhead the development of deep industrial knowledge in target sectors and lead the sourcing of new transaction opportunities through a broad professional network. The position is responsible for managing the entire value chain related to global trade banking including origination, due diligence, structuring/negotiating, and the closing of new transactions as well as managing all associated risks.

The EVP GTBA serves as the leader of the Global Trade Bank and as the liaison between the President and the Board of Directors, other Afreximbank business units and group support functions, investors, and other relevant stakeholders. They are expected to contribute to thought leadership and to foster a healthy workplace culture based on Afreximbank's core values, to support professional development, staff well-being, as well as the transformation of the African continent.

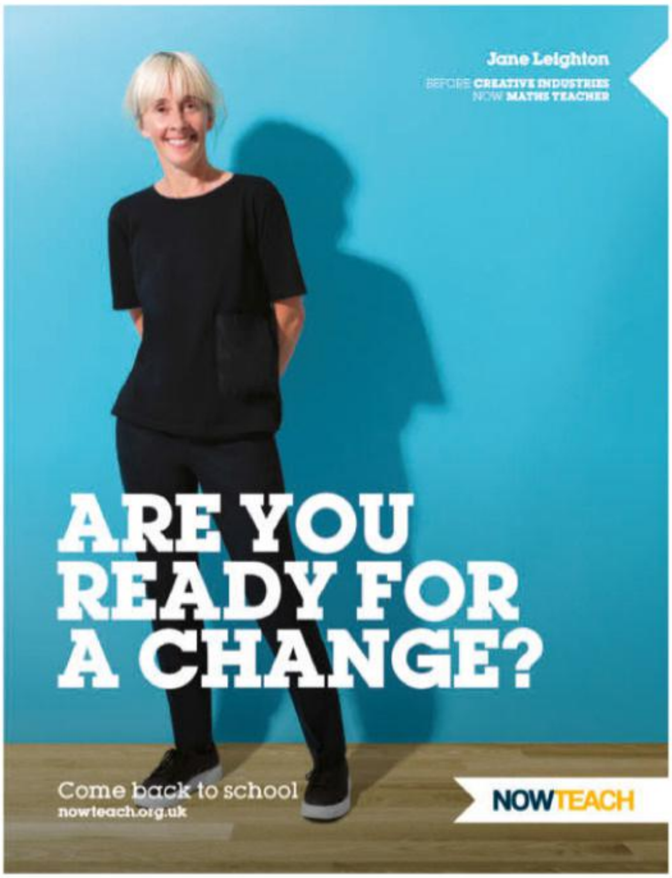
The Candidate

Eligible candidates for this role must be able to demonstrate the following:

- National of an African country (including dual citizens)
- Relevant undergraduate degree and a post-graduate degree or professional qualification in lieu
- Minimum of 15 years' relevant experience in financial and investment services with a demonstrable track record in the banking industry at senior management level
- Substantial experience of leading and managing trade-related banking, coupled with strong current knowledge of the African trade environment and key trade sectors
- Strong business acumen, maturity and tact gained within multicultural environments, with experience of building successful relationships at the highest levels in government and the private sector
- Excellent communication, business presentation and analytical skills
- Proven stakeholder management experience coupled with strong decision-making and problem-solving skills

If you believe you meet the eligibility criteria for this role and wish to apply, please send a full curriculum vitae to our retained Consultant, Robert Baldwin, at: **robertbaldwin@willis-partnership.co.uk**, quoting reference **DGLTR/22**.

Applications sent directly to the Bank will not be considered. The closing date for applications to be received is **31st January 2023**.



Trusti

Kosovo Pension Savings Trust (KPST) is a €2.4bn defined contribution pension fund in the Republic of Kosovo. It is an independent legal entity, governed by a Governing Board, whose responsibility is to administer and manage mandatory pension savings of Kosovo residents.

KPST is looking to appoint **FIVE (5)** professional members on the Governing Board, who must have at least ten (10) years of relevant professional experience.

A link to the detailed list of requirements, duties and responsibilities, and how to apply, is available via the KPST website at:
http://www.trusti.org/en/about-us/overview/jobs/

The deadline for receiving applications is:
December 23, 2022 at 16:00 CET.

Pro-democracy students

Your article on mainland Chinese students in America and Britain who oppose communist China alluded to several factors that deserve elaboration ("Posters of protest", November 19th). Widespread intimidation (threats, bullying and physical violence) against activists abroad is so common that it is scarcely remarked on by protesters.

The recent attack on Bob Chan, a Hong Kong pro-democracy demonstrator, in the grounds of the Chinese consulate in Manchester is repugnant as well as a clear breach of both British law and international diplomatic protocol. It was unusual only because it was a video-recorded account of the sort of assault by Chinese operatives that is all too common. It reflects poorly on democratic governments that they allow the Chinese Communist Party to conduct these sorts of actions within our free societies. The failure of Britain to expel those involved in the attack will only encourage this sort of dangerous behaviour.

Moreover, notwithstanding the reluctance of some mainland students to join protests with Hong Kongers, we are witnessing a variety of overseas groups making common cause in their fight against the Communist Party. The hundreds of thousands of new members of the Hong Kong diaspora are working with Tibetans, Uyghurs and veterans of the 1989 Tiananmen pro-democracy movement. More recently we have found that Burmese, Thais and other activists from countries neighbouring China see the Communist Party for the threat that it is and are prepared to act accordingly. Tellingly, the annual events on June 4th commemorating Tiananmen have now become an international mourning for the victims of the party.

MARK CLIFFORD
President
Committee for Freedom in Hong Kong Foundation
Washington, DC

The problem with crypto

"Never before has crypto looked so criminal, wasteful and useless," you said, after the demise of FTX ("Crypto's downfall", November 19th). On the contrary, from the beginning the idea of financial instruments with no connection to government regulation was an obvious field day for gangsters, con artists and legions of gullible fools who thought they could get rich quickly while producing no economic benefit whatsoever.

Hopefully, some of the millionaire celebrities who assured financially illiterate fans that everything was safe and secure will also be among those who lost millions. Your efforts to suggest that there was anything at all worthwhile about this vast scam are unconvincing.

PROFESSOR JEFFREY HERF
Department of History
University of Maryland, College Park

The knock-on effects of cuts

Bagehot identified the ways in which a protracted squeeze on public finances is making its presence felt in Britain (November 12th). It is also worth noting that spending cuts can have an impact on other parts of the state's activity. For example, because of a chronic lack of investment in services there is frequently a delay to assessing mental-health patients in emergency rooms. Most of these patients are escorted to A&E by two police officers (under a "section 136"). These officers must remain with the patient until the mental-health team has made a formal decision about his or her treatment.

This means that the police spend a worryingly large amount of their time sitting around in A&E waiting for the assessments. At one point recently there were so many police in my A&E that few officers were available for that particular area of London for other activities.

The lack of investment combined with rigorous laws on standards means that we are trying to run a gold-standard health service, but to the point where we take resources from other parts of the state.

DR BEN RUSSELL
London

Just increasing medical-student places is not the answer to getting more doctors in Britain ("Go east", November 5th). Foundation training has been oversubscribed for years and there is a lack of core specialty training posts. Britain has a huge dearth of consultant anaesthetists and this year sub-specialty anaesthetic training was four times oversubscribed. Even more worrying, after we train specialty anaesthetists for three years many leave for Australia, because there is a huge bottleneck to enter higher training here. This is one of many reasons why doctors will vote to strike in January 2023.

DR BEN EVANS
Core anaesthetics doctor
Newcastle-upon-Tyne

Bagehot's summation of Britain reminds me of the misery of the Roman population following Attila the Hun's ravage of northern Italy, as described by Edward Gibbons in his history of the fall of the Roman empire: "The taxes were multiplied with the public distress; economy was neglected in proportion as it became necessary; and the injustice of the rich shifted the unequal burden from themselves to the people, whom they defrauded of the indulgences that might sometimes have alleviated their misery."

NILS RAESTAD
Nesoya, Norway

Election non-result

As you predicted, Kazakhstan's presidential election was not as exciting as it should have been ("One steppe forward", November 19th). Kassym-Jomart Tokayev was re-elected with 81% of the vote, sending a powerful message to Kazakhs: the wind of change is blowing, but it is not powerful enough to produce any real reform. Amanat (commitment), the party holding the majority in the lower house of parliament, is a mere wolf in sheep's clothing. Even after the brand rename from Nur Otan (radiant fatherland) you can still sense the methodology if not the ideological presence of Nursultan Nazarbayev, the former president. It may be another decade before we will see a proper opposition candidate who actually stands out, and not one like this year's, who made his name by karate-chopping a meat bone.

BERIKULY MADIAR
Almaty

We're only here for the beer

Standard-bearers of classical music face specific challenges ("Airs and graces", November 19th). However, any genre is hampered by the fact that music may be used, even unintentionally, as an accompaniment to something else. There are many reasons other than music why people attend live concert performances. A shrewd talent buyer for a music venue once told me: "I don't sell music, I sell beer."

DAN COLEMAN
Composer-in-residence
Tucson Symphony Orchestra

Orgasmic foods

I never imagined *The Economist* to be a family newspaper. Still, I can't think of any other reason why you would incorrectly recount the deli scene in "When Harry Met Sally" that ends with the line, "I'll have what she's having" ("Assimilation nation", November 26th). Meg Ryan wasn't describing the menu. If Jewish food did have the effect you implied, my Polish and Russian Jewish grandparents would have had a much happier marriage.

ADAM SMITH
Lexington, Massachusetts

Letters are welcome and should be addressed to the Editor at
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Email: letters@economist.com
More letters are available at:
Economist.com/letters



When the tide turns

Rising interest rates and inflation have upended the world of investing

For almost a year, ever since America's stockmarket peaked on January 3rd, investors have been craning their necks, looking for the bottom. Will the most recent trough, halfway through October, turn out to have been it? More importantly, bottom or not, what trends will shape returns going forward?

Even at present levels, the slump in markets around the world this year has been painful. MSCI's broadest index of global equities is down by 18%, as is the S&P 500 index of big American firms. It is not just shares that have suffered. More speculative assets, naturally, have been bludgeoned far harder: the market value of all cryptocurrencies, which surged to nearly $3trn in 2021, has fallen to $840bn. Supposedly safer assets have not escaped the rout, either. The indices compiled by Bloomberg, a data provider, of global, European and emerging-market bonds have all dropped by 15%; the American equivalent by 11%.

The breadth of losses is even more striking than the depth. In particular, the "60/40 portfolio", comprising 60% stocks and 40% bonds, a popular choice for investors seeking a good return without running big risks, has performed appallingly. Evan Brown and Louis Finney of the asset-management arm of UBS, a Swiss bank, calculate that, as of mid-October, a 60/40 portfolio of American equities and Treasuries had had its worst year since 1937.

Typically, portfolios allocating more to bonds and less to equities are considered less risky. But losses on bonds have been so steep this year, says Alex Funk of Schroders, another asset manager, that this rule of thumb has not always held. Other presumed safe havens have also offered little shelter. Gold, seen by some as a hedge not just against the vagaries of financial markets, but also inflation, has fallen by 3%. The Japanese yen started the year at 115 to the dollar and is now 136. Well-timed bets on commodities, many of whose prices were supercharged by Russia's invasion of Ukraine in February, would have paid off handsomely. Otherwise, investors have had startlingly few places to hide (see chart 1 on next page).

The plunging markets are the result of a decades-old macroeconomic regime falling apart. High inflation, not seen in the rich world since the 1980s, is back, which in turn has brought to an end ten years of near-zero interest rates. As a result, the rule book of investing is being rewritten. Protecting portfolios from inflation, once a peripheral concern, is now a prime consideration. Rising government-bond yields, meanwhile, make riskier assets less desirable. In particular, private markets (as opposed to standardised investments traded on exchanges), which expanded massively during the years when decent returns were hard to find, face an uncertain future now that they are not.

Before this year, as bond yields grew ever more anaemic, the desperation of yield-hungry investors was encapsulated by the acronym TINA: there is no alternative (to riskier assets such as equities). This approach helped to propel the world's stockmarkets on a rampaging run. From its low point in 2009 to its peak at the end of 2021, the S&P 500 rose by 600%.

In addition, the TINA mentality drove many investors to buy more obscure or illiquid assets in the hope of earning halfway decent returns. Private-equity funds have been prolific investors in unlisted companies ever since the buy-out boom of the 1980s. The typical "leveraged buy-out" involved buying a company mainly with borrowed money, parking the debt on its balance-sheet and selling it on. The dirt-cheap loans available after the financial crisis lit a rocket under the industry. Private markets around the world—the lion's share being private equity, but also including property, infrastructure and private lending—quadrupled in size, to more than ▸▸

$10trn. Big private-equity firms created listed funds of unlisted firms, to lure in retail investors. But it was institutional investors that were especially enthusiastic: private equity and property came to comprise almost a fifth of American public pension funds' portfolios.

The monetary backdrop that drove those trends has now changed dramatically. Though inflation in America peaked in June, it still stands at 7.7%. Elsewhere things are worse: in Britain prices are 11.1% higher than they were a year ago, and in the euro area the rise is 10%. The IMF forecasts a global inflation rate of 9.1% over the course of 2022.

As a result, markets expect the Federal Reserve to raise interest rates to 5% in 2023, and the Bank of England to lift them to more than 4.5%. What is more, both central banks have started to unwind the huge holdings of government bonds they built up in the wake of the financial crisis (quantitative tightening, in the jargon). The intention of the purchases was to hold down long-term interest rates; the sales should have the opposite effect.

This year's carnage in the markets is the natural outcome of these changes. Inflation erodes the value both of the interest payments on bonds and of the principal. At the same time, rising interest rates drive bond prices down, to align their yields with prevailing rates.

If inflation and interest rates were increasing because of runaway economic growth, shares might also have risen in expectation of higher earnings. But instead prices and rates are rising because of a commodities shock, supply-chain snarls and labour shortages that threaten corporate profits, too. That is why the hedging relationship that underpins the 60/40 portfolio has fallen apart. Rising yields on bonds simply make more volatile equities less attractive by comparison, so the prices of both assets have fallen at the same time.

When the dust finally settles, it will reveal a landscape that is likely to have changed for good. Though markets expect interest rates to fall after a peak next year, the odds that they will collapse back to next-to-nothing seem slim (see chart 2). That is because inflation is likely to be hard to tame. Nearly two years of it have raised expectations of price rises, which can be self-fulfilling. Tight labour markets in many countries will drive wages up, providing a further push. Unrelenting demands on government spending—from ageing populations to an ever-growing expectation that states will shield people and companies from economic storms—may also help elevate interest rates and propel inflation. Taken together, these forces will reshape investors' portfolios and alter the returns they can expect.

Start with inflation. Simona Paravani of BlackRock, an asset manager, does not expect it to return to the "rock'n'roll" levels of the 1970s, when it spent two long spells in double digits. But even if it soon settles down to an average in the low single figures, it would still be more elevated than it has been since the financial crisis. That makes building inflation-resistant investment portfolios more important than it has been in decades.

A year of hard knocks 1

Global prices, January 3rd 2022=100



Sources: Bloomberg; FTSE; MSCI

Fortunately, that is easier than it used to be. Commodities, as a frequent source of inflation, also provide a good means to hedge against it. They are now substantially more "financialised" than they were in the 1970s, meaning that they have deep and liquid futures markets. That allows investors to acquire exposure to them without having to own any actual barrels of oil or bushels of wheat.

Other assets can also provide protection from rising prices. Blake Hutcheson, the chief executive of OMERS, a large Canadian pension scheme, describes how his fund spent years building up big holdings in infrastructure and property. The revenues from such investments, in the form of rents and usage fees, tend to rise with inflation. "It always felt like low inflation and low interest rates were an aberration," says Mr. Hutcheson. "We've been preparing for a day that looks like today."

A higher hurdle 2

United States, government-bond yields, %

December 6th 2022, by maturity



Source: Federal Reserve

The end of ultra-low interest rates has more far-reaching consequences. The increase in the "risk-free" rate "affects how you think about private assets, equities, bonds, credit, everything", says Schroders' Mr Funk, by raising the hurdle rate against which all other returns are measured. TINA is dead, and has been succeeded by TARA: "there are real alternatives". Or, as Raj Mody of PWC, a consultancy, puts it, "If you can get 4% on government bonds, is 7% on private assets enough?"

A reckoning is thus due over whether the more exotic and less liquid assets snapped up during the low-yield years are still worth what investors paid for them. It will be a big one. Private-equity funds and their cousins, private-credit funds, which raise money from investors to make loans, have become driving forces in corporate dealmaking. Leveraged buy-outs amounted to $1.2trn in 2021, dwarfing the previous peak of $800bn in 2006. Private-equity deals accounted for a fifth of the value of all mergers and acquisitions. The market for private credit, often used to fund such deals, ballooned to over $1trn. That is more than twice its level in 2015 and only slightly less than the value of big loans made directly by large financial institutions. Big investors such as university endowments and sovereign-wealth funds have loaded up on private assets like never before.

A creaking lever

Can they keep their appeal now that rising government-bond yields have resurrected the alternatives? For leveraged buy-outs, which by definition are extremely sensitive to the cost of borrowing, the answer is almost certainly no. Scarcer, more expensive debt makes such deals harder to finance and less attractive to complete, as higher interest payments eat into prospective returns. Higher rates also diminish the value of the companies such funds already own, given their high levels of debt.

Elsewhere the picture is more mixed. Private loans tend to have floating interest rates. That means that, unlike bonds, on which the interest is usually fixed, their value grows as rates rise. Many funds specialise in distressed companies, of which there will be plenty as debt becomes more expensive to service. Institutional investors often feel that the stronger oversight and influence that comes with private investments, as compared to public ones, gives them an edge.

Yet the raised hurdle rate is inescapable. Private investors who buy a toll road, wind farm or office block are deliberately taking more risk than they would if they bought government bonds instead. Rich-world countries are very unlikely to default on their debt, but infrastructure and property can cost more to build than expected or yield less profit than projected. This risk

is worth taking if investors are compensated by a better rate of return. The climb in risk-free rates therefore means private assets, too, need to offer higher returns if they are to stay attractive. Squeezing more revenue out of the assets will be tricky in a slowing economy. But the only alternative means to realise higher returns, selling the assets for a higher-than-expected price, is even more implausible given already dizzyingly high valuations.

In all likelihood, many private assets face sharp write-downs in value. It is often up to the fund that manages the assets to value them. Managers are naturally reluctant to mark them down. In the first three quarters of this year, for instance, Lincoln International, a bank, reckons that private-equity funds globally marked up the value of the firms they own by 3.2%, even as the S&P 500 shed 22.3%. Such foot-dragging, however, will lead to lacklustre returns in the years ahead, as assets with unrealistic valuations prove difficult or impossible to sell for a profit. Many institutional investors have invested too deeply in private markets to unwind their holdings quickly. The scope for disappointment is high.

In property, it is not just big institutional investors that are being hammered by rising interest rates. The same cheap and easy borrowing that lured them into private markets in the 2010s also pushed house prices ever higher. During the pandemic even lower rates and, for some, stimulus cheques, supercharged that trend. Now these drivers are going into reverse. More expensive mortgages limit how much buyers can borrow, causing their purchasing power to shrink. Like private-equity managers, home-owners are loth to acknowledge that their property may be worth less than they paid for it, making them unwilling to sell and causing transactions to dwindle. Yet across much of the rich world, a housing slump has already begun.

Higher risk-free rates also change the types of company prized by investors. During the TINA years "growth" stocks, whose value depends on the promise of spectacular profits in the future, stormed ahead of their "value" counterparts, which offer steady income but less scope for growth. But as interest rates rise, they erode the present-day value of future earnings, making growth stocks less appealing.

When the interest rate is just 1%, $91 deposited in the bank will be worth $100 in ten years' time. Put another way, $100 in ten years' time is worth $91 today. But when the interest rate is 5%, it takes only $61 to generate $100 in a decade. So $100 in ten years' time is worth just $61 today. That makes future growth much less valuable, and immediate profits much more so. As stockmarkets have tumbled, therefore, growth stocks have performed especially poorly (see chart 3).

A dividend in hand... 3

MSCI world stockmarket indices

January 3rd 2022=100



Source: Bloomberg

The same logic diminishes the investment case for startups and nascent firms, which by definition will earn the lion's share of their profits in the future (if they prove successful at all). Higher rates diminish the value of future profits relative to current ones. For a firm whose profits are projected to remain stable indefinitely, less than a tenth of the present value of its future earnings comes from the first ten years when the interest rate is 1%. At 5%, around two-fifths does.

Sure enough, the type of startup that draws the most interest from investors has changed, says an experienced venture capitalist. Whereas those that expanded the fastest used to be the most highly prized, the balance has now shifted in favour of those that generate, rather than burn through, cash.

Ray Dalio, the founder of Bridgewater, the world's biggest hedge fund, believes that a much bigger paradigm shift is under way than a simple rise in interest rates and inflation. He cites the risks of huge debts, populism within Western democracies and rising tensions between global powers. The first puts pressure on central banks to tolerate inflation and even monetise debt rather than raising rates. The second and the third could spur conflict both within and between states. Mr Dalio worries that the stage could be set for a period like that between 1910 and 1945, where in some regions "you have almost the complete destruction of wealth as we know it".

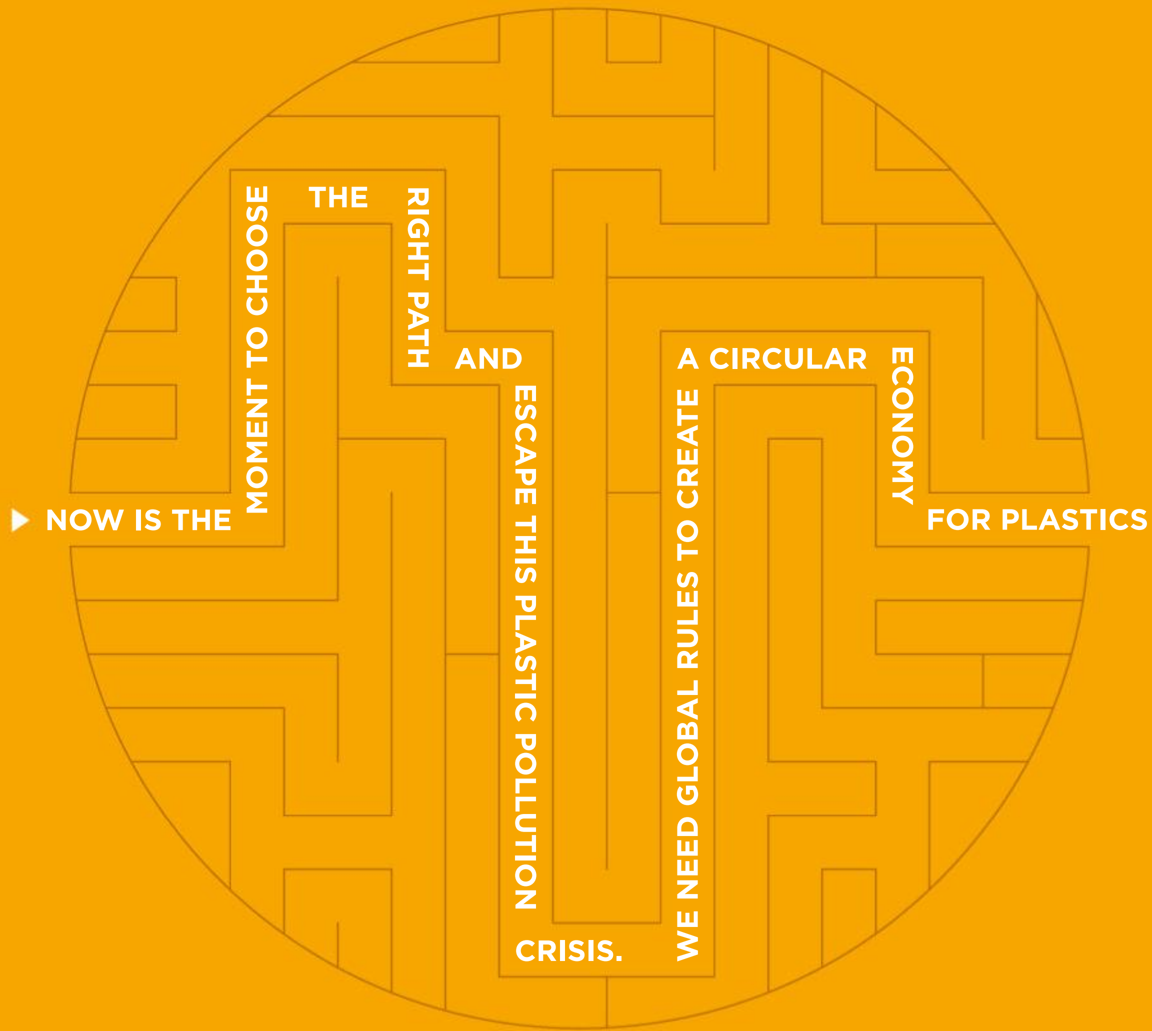


Even setting aside such a dark scenario, straitened times lie ahead for many investors. Perhaps the grimmest impact is on those close to retirement. With less time to recoup recent losses, such savers are always more vulnerable to market shocks. Worse, to mitigate this, they are often advised to hold the sort of bond-heavy portfolios that have been among the hardest hit this year. Their short investment horizon means that future returns can do little to restore their fortunes.

Many 30- and 40-somethings are only slightly better off. Most had saved too little by the start of the 2010s to benefit fully from the go-go years, yet had accumulated enough by the end of the decade to have suffered heavy losses this year. Those who recently bought homes are painfully exposed to a global housing slump that is only just beginning. Many can look forward to the double whammy of owning houses that are worth less than the mortgage on them while, in places where long rate fixes are rare, also having to remortgage at higher rates. But unlike those closer to retirement, this generation at least has the time to try to repair the damage.

In that respect, the news is good: the crash has at last lifted expected returns from the rock-bottom levels of recent years. The 60/40 portfolio, say Mr Brown and Mr Finney of UBS, is back in business. Higher bond yields increase its income stream and lower equity valuations increase the likelihood of future returns. After a year in which the dollar has strengthened considerably against most currencies, reversion to the mean would raise the value of foreign assets for American investors. As a result, UBS has boosted its forecast for the portfolio's average annual return to 7.2% over the next five years, up from 3.3% in July 2021.

The biggest beneficiaries of this are the youngest cohort of investors. They will have started saving only recently, so will not have built large enough portfolios to be much hurt by this year's crash. In any case, the vast majority of their earnings are ahead of them. Ever giddier market valuations had fostered ever gloomier expectations of the returns their savings could deliver. So bad did their prospects seem that in April Antti Ilmanen of AQR, a hedge fund, published a book entitled "Investing Amid Low Expected Returns". He dedicated it to "the young retirement savers across the world—who have been handed a bad draw—and to everyone working for their benefit". That work is now much easier. ■



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Congress

Last-minute bargains

WASHINGTON, DC

Congress has set itself a long to-do list before it can decamp for the holidays

RAY BRADBURY, an American science-fiction writer, has a short story called "The Last Night of the World" about a husband and wife on the last night of existence. It is an unforgettable anticlimax. Rather than satisfy any unfulfilled wishes, the couple choose to spend a quiet night in just like any other—even doing the washing-up before getting cosily to bed. Congress does the opposite. It is only when opportunities are closing, when awful consequences are nigh, that the frantic dash to do things begins.

Such things are often left to the last minute. But the results of the recent midterms add urgency to this lame-duck session. Democrats will soon face divided government, rather than the unified control they have enjoyed over the past two years. No one expects much bipartisan dealmaking if Kevin McCarthy becomes the new House speaker. Mr McCarthy's incoming majority is so narrow that he may be bullied by the right of his caucus—indeed, he is already being pushed about—making him less able to cut deals. "Any Republican that's out there trying to work with [Democrats] is wrong," he told Fox News, the conservative broadcaster.

After a period of election-induced stasis, Congress has a daunting to-do list in the lame-duck session between the November election and the start of the next legislative session in early January. Money must be appropriated so that the government does not shut down on December 16th, when current funding lapses. Passage of this year's iteration of the National Defence Authorisation Act, which sets the Pentagon's budget and policy, is still pending. However bad the partisan bickering, Congress has managed to pass one every year since 1961. The little-noticed but important annual housekeeping exercise to renew or modify expiring tax provisions, cryptically referred to as "tax extenders", still needs to be passed too.

Only a few trains will leave the station before the new regime arrives, says Molly Reynolds of the Brookings Institution. Most left-behind Democratic provisions and darling ideas—a much-needed reform of permitting rules for energy projects, a more generous child-tax credit, modest immigration reforms—are angling to hitch a ride on one of them. "We're talking about a grab bag of miscellaneous pet priorities," said a frustrated Mitch McConnell, the Republican leader in the Senate. "If Democrats wanted these controversial items so badly, they had two years to move them across the floor."

To get anything through, Democrats will need Mr McConnell onside. They have not taken the necessary steps to pass legislation through a procedure known as reconciliation, which avoids a filibuster in the Senate and therefore requires only a simple majority. This means that at least ten Republican senators must sign on to the last-minute legislation, and many of them are balking at the extras that Democrats are trying to attach to must-pass legislation. So far, negotiations have been plodding. The option to punt decisions away remains in the form of a "continuing resolution", which keeps the federal government running at previously approved levels. But hardly anyone is hopeful that the next Congress will be more generous. The Pen- ▸▸

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tagon is incensed at the prospect of being funded through a continuing resolution, which would limit its funding to last year's lower levels and also bar the armed forces from starting new weapons programmes.

As though it were another planet, legislative time is much slower than calendar time. Arcane rules, particularly in the Senate, mean that even when a deal is agreed to, ultimate passage can take days unless there is unanimous consent (and often there is not). There are many lengthy mandatory debate periods in which no debate takes place. For that reason, even pieces of legislation that command sizeable majorities are not making their way out. One example is a much-needed reform of the Electoral Count Act, a badly written law about how presidential elections are certified that Donald Trump tried to exploit to remain in office after he lost, which has the necessary Republican support to pass, but has had some trouble finding the right train to join itself to. "This business of 30 hours of debate when there's no debate is just preposterous," says Angus King, a senator from Maine who was one of the lead drafters of the bill. "No organisation in the world would run themselves that way."

Other worthy efforts may fall by the wayside. Kyrsten Sinema, a Democratic senator from Arizona, struck a last-minute deal with Thom Tillis, a Republican senator from North Carolina, to trade a pathway to citizenship for 2m "Dreamers", undocumented immigrants brought to America as children, for more border-security spending. Whether this can be turned into legislative text—and get enough Republicans on board—is unclear. Michael Bennet, a senator from Colorado, is pushing for a more generous child-tax credit, a policy which substantially reduced child poverty when it was in temporary effect in 2021. (Mr Bennet's brother is *The Economist*'s Lexington columnist; he had no involvement in this story.)

His idea is to trade it with Republicans for other tax breaks, such as one allowing businesses to deduct their research and development expenses. "I've been here, many times it feels like, in the middle of the night or two o'clock in the morning on Christmas Eve or New Year's Eve when we have figured out how to pass tax extenders for the wealthiest people in the country," says Mr Bennet. (One of those, an enhanced tax deduction for the hard-up owners of racehorses, recently expired.) "That makes it imperative that if we're going to do these other extenders, we should do the child-tax credit as part of that."

He is not the only senator expecting to be snowed under with work while most Americans are dreaming about a snowy holiday. "I'll be pleasantly surprised if we aren't," says Mr King. "I think we're going to be here the week of Christmas." ■

A SCOTUS double feature

Moore or less

WASHINGTON, DC

Two cases address free speech and state legislatures' power over elections

HAVING CLEANED away abortion rights, clean-air regulations, the church-state wall and many gun restrictions last June, the justices have taken up two more aspects of society that may need rejigging.

December 5th featured a clash between gay rights and free speech, an issue that has been simmering since the court recognised same-sex marriage as a constitutional right seven years ago. *303 Creative v Elenis* poses the seemingly premature question of whether Lorie Smith, a web designer, has a First Amendment right to refuse to create wedding websites for gay couples. Ms Smith has yet to actually make any such websites. She wants assurances from the Supreme Court that if she steps into the e-nuptials market, Colorado—despite its law requiring shops to keep their doors open to customers without regard to their sexual orientation—will respect her belief opposing gay marriage and allow her to work with straight couples only.

Both sides agree that Ms Smith cannot turn away clients based on their identity. They disagree as to whether refusing to make gay-wedding websites amounts to what Justice Neil Gorsuch called an objection to a "who". No, Ms Smith's conviction concerns a "what", insisted Kristen Waggoner, her lawyer. Her client "believes opposite-sex marriage honours scripture and same-sex marriage contradicts it". Justice Amy Coney Barrett built on this idea by leading Ms Waggoner to say that Ms Smith would refuse to make wedding websites for some straight couples, too—such as those who met by cheating on their former spouses.



Come a little bit closer

But Ms Waggoner was flat-footed when faced with queries from the liberal justices. Would a win for Ms Smith (Justice Ketanji Brown Jackson wondered) mean that an old-fashioned mall Santa could opt to pose for photos with white children only? Can vendors (Justice Sonia Sotomayor asked) turn down work at a wedding of people with disabilities because they don't approve of such marriages?

There were no good answers to these questions. But the two lawyers arguing against Ms Smith faced a rough go, too. Shaking his head, Justice Alito noted Colorado's acknowledgment that Ms Smith could include "a denunciation of same-sex marriage" in every wedding website she creates, as long as she sells them to gay and straight customers alike. Doesn't that make the state's position "kind of a sliver of an argument" that may not make "any difference in the real world as a practical matter?" After all, how many gay couples would patronise a graphic designer who insists on such messages?

The six conservatives seemed to think that a win for Ms Smith would save other businesses from, in Justice Alito's words, "espous[ing] things they loathe". But they had only a wisp of an argument to stem the slippery slope concern from the other side. Why wouldn't allowing Ms Smith to stay away from gay weddings unleash discrimination based on race, religion or disability? Justice Alito suggested that those kinds of animosity have nothing in common with the "honourable" views of religious people who oppose same-sex marriage.

A more complex lineup seemed to emerge on December 7th in *Moore v Harper*, a case that could re-engineer the way federal elections are conducted. Moore arises out of a dispute over congressional maps. A year ago in North Carolina, which is closely split between Republican and Democratic voters, the state's Republican-held legislature drew a congressional map giving Republicans a virtual lock on ten of the state's 14 House seats. When the state's supreme court found this inconsistent with North Carolina's constitution, it replaced the map with fairer lines drawn by experts. Republican legislators balked at this, running to the federal Supreme Court to complain that North Carolina's high court was not authorised to question a map that the legislature had duly adopted.

Speaking in favour of the "independent state legislature" theory that animated North Carolina Republicans' appeal, lawyer David Thompson pointed to Article I of the constitution specifying that the "times, places and manner of holding elections" for Congress "shall be prescribed in each ▸▸

state by the legislature thereof". This means no state entity may constrain a state legislature performing the "federal function" of election regulation, he said.

Scepticism came quickly from liberal justices. Justice Jackson noted that state legislatures are creatures of state constitutions and must, logically, be bound by their terms. Justice Sotomayor pointed to the 10th Amendment, which affords powers to states that federal courts must respect. Emphasising the broader stakes, Justice Kagan warned that granting unfettered authority to state legislatures would discard "the normal checks and balances" at "exactly the time when they are needed most". Politicians have incentives to "prevent voters from having true access and true opportunity to engage in the political process", she said, and unchecked legislatures will tend to indulge those tendencies.

The three liberals were offset by Justices Alito, Gorsuch and Clarence Thomas who warmly received the North Carolina lawmakers' claims. A third troika—Chief Justice John Roberts and Justices Barrett and Brett Kavanaugh—may be the decisive bloc. None jumped to praise the most extreme aspects of the legislators' argument but all groped for a third way whereby neither state legislatures nor state courts are fully autonomous. For Carolyn Shapiro, a professor at Chicago-Kent law school who has testified to Congress on the theory in *Moore*, the centre of the court is "trying to find a balance". ■

Tax law

High deductibles

NEW YORK

Two Trump companies are found guilty of all charges in a criminal tax trial

Two Mercedes-Benz saloons, apartments, private-school tuition, furniture for a Florida home, flat-screen televisions, carpet and cheques stuffed into Christmas card envelopes. These untaxed, off-the-book perks were among the items paid by two entities of the Trump Organisation, Donald Trump's real-estate company, to a handful of its top executives, including Allen Weisselberg, the company's former chief financial officer who was Mr Trump's long-serving lieutenant. After a long criminal trial, on December 6th a New York jury swiftly found Trump Corporation and Trump Payroll Corporation guilty of a host of crimes, including conspiracy, tax fraud and falsifying business records.

There is no question that fraud was committed: Mr Weisselberg admitted as much in court. He said he received $1.76m in such perks. But "did Weisselberg do it for Weisselberg alone? Or did he intend at least some benefit for the corporation?" asked Joshua Steinglass, an assistant district attorney, during the closing statements.

Mr Weisselberg was the prosecution's star witness. He pleaded guilty to tax fraud and will serve five months in jail. Before the trial, which was brought by Manhattan's district attorney, he was granted leniency in exchange for testifying for the prosecution. During his summation Michael van der Veen, one of the defence lawyers (who also represented Mr Trump during his second impeachment trial), urged the jury to treat Mr Weisselberg's testimony with scepticism because "the prosecution have him by the balls."

The jury did not buy it. After less than two days of deliberation, they decided that the two Trump entities were guilty on all 17 charges. Sentencing will take place on January 13th. The maximum penalty the companies face is $1.6m, a paltry sum for them. But a criminal conviction could interfere with the firms' ability to access finance. The companies intend to appeal against the decision. Mr Trump, meanwhile, is still said to be under investigation.

Tax trials are rarely gripping. This one, which began in October after a three-year investigation, has been—notwithstanding pages of spreadsheets, excerpts from ledgers presented on two enormous screens in the courtroom and hours of testimony given by accountants. Mr Weisselberg testified that he knew he owed taxes on the perks and that his tax filings were false. He admitted that the scheme benefited both himself and the companies. But he also claimed the Trump family was not aware of his wrongdoing. He said "personal greed" had driven him to "betray" the family who had employed him for five decades.



Slight returns

The jury did not believe that Mr Weisselberg was a "rogue" employee, as the defence portrayed him. They saw him, as the prosecution hoped they would, as a "high managerial agent" who committed crimes "in behalf of" the companies—expressly for their benefit—rather than merely "on behalf of" them. The scheme falsely reduced the size of their payrolls, meaning they paid less in payroll taxes.

Donald Bender, who managed the companies' taxes for 35 years, as well as Mr Weisselberg's personal accounts, said during his testimony that if he had known about the tax avoidance he "probably would have had a heart attack". Mr Bender's firm cut ties with the Trump Organisation earlier this year because the company's statements could "no longer be relied upon". Mr Trump blames Mr Bender for the mess. He wrote on his Truth Social platform last month, "The highly paid accounting firm should have routinely picked these things up—we relied on them. VERY UNFAIR!" Yet he does not seem to harbour ill-will towards Mr Weisselberg, who has remained loyal and is still drawing a high salary as a senior adviser. A birthday party was held at Trump Tower in Mr Weisselberg's honour last summer, at around the same time he took the plea.

Throughout the trial the defence reminded jurors that Mr Trump and his family were not on trial and that they neither knew about nor benefited from the tax-avoidance scheme. During his closing statement Mr Steinglass pushed back. "This whole narrative that Donald Trump is blissfully ignorant is just not true," he argued. It emerged during the trial that until Mr Trump became president, he had signed every company cheque over $2,500.

The defence objected to the prosecutors' suggestion that Mr Trump sanctioned tax fraud, and the judge sided with them. After the jury had been excused they requested a mistrial—a move given short shrift by the judge. Mr Steinglass asked the jury to "put aside the elephant that's not in the room". This case was not about politics, he said, but about "just two corporations helping its executives cheat on their taxes". But one of Mr Steinglass's closing zingers must have resonated with the jury: "It is not that the folks at the Trump Organisation didn't know what they were doing was illegal, it was that they didn't care." ■



Invasive species

Cat got your tern

LOS ANGELES

Feral house cats have invaded Hawaii

WHEN MARK TWAIN first set eyes on Honolulu in 1866, he observed that the trees were so dense that they blocked the sunlight, lava from past volcanic eruptions covered the corals—and cats were everywhere. In a dispatch for the *Sacramento Union*, Twain reported seeing "tame cats, wild cats, singed cats, individual cats, groups of cats, platoons of cats, companies of cats, regiments of cats, armies of cats, multitudes of cats, millions of cats, and all of them sleek, fat, lazy, and sound asleep".

Nearly 160 years later, however, the descendants of the cats that so delighted Twain are now widely seen as a menace to the islands. The feral cat, explains the Hawaii Invasive Species Council (HISC), has become one of the state's most "devastating" predators.

Cats were first brought to Hawaii aboard European colonists' ships, where they preyed on rats and mice. As their number in their new home grew during the 19th century, birds started to disappear. At least 30 types of native bird became more scarce or went extinct between 1870 and 1930 as they were exposed to their new whiskered foes, according to the US Geological Survey.

Birds are not the only casualty of Hawaii's feline invasion. Toxoplasmosis is a disease caused by a parasite that reproduces in the digestive systems of cats, and then contaminates soil and water through their faeces. A new study determined that two spinner dolphins found stranded off the Hawaiian coast died of toxoplasmosis. From these findings the authors suggest that at least 60 spinner dolphins have died of the parasite over the past 30 years.

The overwhelming majority of the whales and dolphins included in the study were killed by other means. But "if they do become infected, this study suggests that they die and they die quickly", says Kristi West, one of the authors and director of the Health and Stranding Lab at the University of Hawaii. Hawaii's endangered monk seals have also been killed by the bug.

Feral cats are not just a problem for Hawaii. A study published in *Global Change Biology* suggests that, globally, they are responsible for the extinction of at least 14% of bird, mammal and reptile island species. Toxoplasmosis has also been found to kill sea otters along the California coast.

What can be done? A bill that could have directed the HISC to cull cats using poisoned bait, as Australia has done, died in the state legislature earlier this year. Animal-lovers prefer to focus on capturing, neutering and releasing wild cats so that they have no kittens. But HISC contends that such programmes do not actually help curtail cat numbers. Ms West suggests that people are too quick to blame the cats, when there is another culprit. "People have to stop abandoning these poor cats," she says. "It's not really a cat problem. It's a human problem." ■

Youth suicide

Beginnings and endings

WASHINGTON, DC

Suicide among young Americans is rare, yet has risen at a worrying pace

IN THE 1950S, when the term "teenager" was first popularised, it brought to mind trouble. Spotty youths who engaged in risky behaviour outside the house—getting drunk, pregnant or into car crashes—were "the number one fear of American citizens", wrote Bill Bryson in his memoir, "The Life and Times of the Thunderbolt Kid". Today, the risks American teenagers face come from themselves. Boys are more likely to kill themselves than to be killed in a motor crash. Girls are nearly 50% more likely to injure themselves in a suicide attempt than to face an unplanned pregnancy. Suicide is the second-biggest killer of ten- to 18-year-olds, after accidents.

The rise in youth suicide is part of a broader increase in mental-health problems among the young. This preceded the pandemic, but was probably accelerated by it. In 2021 nearly half of American high-school students said that they had experienced persistent feelings of sadness and hopelessness in the past year, up from 26% in 2009; one in five seriously considered suicide, up from 14%; and 9% attempted to end their life, up from 6% (see chart). Although the rates for 15- to 19-year-olds are not unprecedented (there was a similar peak in the early 1990s), the rates for ten- to 14-year-olds are higher than ever before.

The fact that it has become more acceptable for young people to discuss their feelings has surely contributed to some of the changes, such as the rise in self-reported sadness. Better screening may also play a role. But neither explains the most alarming data: suicide rates. Attempts, injuries and deaths have all risen among young Americans over the past decade. Last year, no age group saw a steeper rise than men aged 15 to 24, according to the Centres for Disease Control and Prevention (CDC).

The causes are only starting to be understood. The usual suspects (childhood poverty, parental substance abuse or parental depression) have not changed that much; indeed, childhood poverty has fallen. What has shifted is how teens live their lives and relate to their environment and each other. Greater isolation and loneliness are probably important.

Experts have a reasonable understanding of how to help prevent suicide and protect against such thoughts. Not all young people are equally at risk. Although girls in America are much more likely to contemplate ending their lives, or injure them-

selves in attempting to do so, teenage boys are nearly three times as likely to die from suicide. Young people who identify as lesbian, gay or bisexual are three times as likely to feel suicidal. During the covid-19 pandemic children who had faced abuse or neglect were 25 times as likely to try to kill themselves as their peers with happier childhoods were.

Geography matters, too. Children who live in rural settings are at heightened risk, in part because they have less access to care. Tribal communities suffer more than other groups. Alaska's youth suicide rate—at 42 annual deaths per 100,000 young people, the highest of any state—is four times the national average.

Australia, England and Mexico have also seen big rises in youth suicide over the past decade. A recent National Health Service study found that, in England and Wales, more than one in six children between the ages of seven and 16 now has a probable mental-health disorder. . Between 2012 and 2018 teenage loneliness increased in 36 out of 37 countries studied, according to the *Journal of Adolescence*.

Bad exceptionalism

But America stands out for its absolute rates of youth suicide. Although in England and Wales suicide among 15-to-19-year-olds has grown faster, in 2021 6.4 young people per 100,000 there took their own lives, as against 11.2 young Americans.

America is also exceptional for the availability of guns. Use of a firearm is the most common method of suicide for boys, which helps explain why they are more likely to die from an attempt than girls. Easy access to a lethal method is one of the biggest risk factors for someone in despair. In Switzerland, suicide rates among men of military-service age dropped sharply after the country halved the size of its army, which often requires soldiers to take weapons home. During the pandemic, sales of firearms increased in America. That exposed an extra 11m people, half of whom were children, to a gun at home. Suicides by gun accounted for the entire rise in American suicides between 2019 and 2021, according to an analysis by researchers at Johns Hopkins University.

But guns are only part of the story. Speculation over other causes has ranged from earlier puberty to the effects of social media and even to climate-change despair. Some of the more compelling evidence points to a change in how young people relate to their surroundings. Children who say they feel close to people at school were much less likely to suffer from poor mental health, and 50% less likely to have attempted suicide, the CDC found.

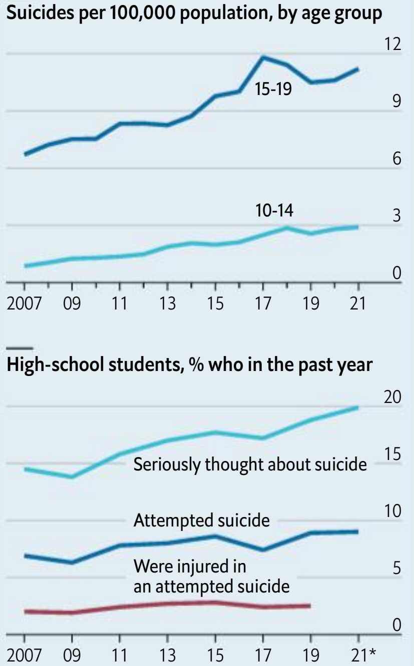
This protective layer may be fraying. "The types of adolescent activities that would be indicative of that social connection, or of building a sense of meaning or place in your social circle, are fundamentally shifting," says Katherine Keyes at Columbia University. Teenagers spend far less time on traditional social activities, such as playing sports or going on dates, than in the past. In the late 1970s over half of 12th-graders met up with friends almost daily; by 2017 just over a quarter did.

One of the fiercest debates is whether social media alienates young people or offers a new avenue for connection. Just as a school environment can help or harm a child, the same is the case online. Feeling virtually connected to peers, family or other groups during covid had a similar (if smaller) protective effect as feeling connected to people at school, found the CDC. Young people from sexual minorities are likely to say social media helps them feel less alone and more supported. But it can also make things worse, as a recent inquest into the suicide of Molly Russell, a British 14-year-old, found. Harmful social-media content probably "contributed to her death in a more than minimal way", it concluded.

Evidence of the harm to development and mental health done by school closures is increasingly compelling. Covid appears to have hurt the mental health of younger people disproportionately, says Richard McKeon at the Substance Abuse and Mental Health Services Administration. This was "superimposed on a longer-term upward trend in youth suicide", he adds. For teenage girls, average weekly emergency-department visits for suspected suicide attempts were 50% higher in February 21st-March 20th 2021 compared with the same period in 2019.

Harmful trends

United States



Source: CDC *January-June

Even if the causes are not fully understood, solutions are. "This is not rocket science," says Jane Pearson from the National Institute of Mental Health. "We know what helps kids develop healthy trajectories that make it less likely they develop mental disorders or suicidal thoughts and behaviours." Most important are a focus on improving family communication and support, family and community attachments, as well as children's attachments to school, so they feel safe and connected.

Programmes that train children to cope with emotions and social problem-solving have had impressive results. The Good Behaviour Game, first tried out in Baltimore in the 1980s, teaches first-graders how to work in teams and behave well in class. Compared with the control group, pupils who took part in the original programme were half as likely to think about, or attempt, suicide later in life.

Doctors' offices are important, too. Nine out of ten children who died by suicide had some contact with the health-care system in their final year of life. If paediatric practices were better prepared and incentivised to address behavioural problems, this could make a huge difference, reckons Richard Frank at the Brookings Institution, a think-tank.

Lastly, educating schools and communities in preventing suicide "contagion" is essential. Between 1% and 5% of teenage suicides are part of "clusters," more so than for adults. The playbook for schools is clear: deaths should be commemorated but not mawkishly; suicide should be discussed but not normalised; pupils should be encouraged to seek help. Just as important is work with staff members, who can become "numb" or even "disengaged" after too much tragedy, says Sharon Hoover from the National Centre for School Mental Health, who often gets called in once a school has suffered multiple deaths.

And yet it is important not to overreact. "Suicidal thoughts have always been common. They peak in teens and diminish in prevalence with age," says Christine Moutier from the American Foundation for Suicide Prevention. "The vast majority of young people having suicidal thoughts are not imminently about to act on them, or even at risk of dying of suicide," she adds. Rather, it is a sign of distress and a reason to discuss their feelings. "It's crucial that caregivers and providers across the board do not panic when they hear the word 'suicide'," warns Dr McKeon. A child brave enough to open up about such thoughts, but who is then rushed to hospital against their will, is unlikely to trust an adult again. That is the last thing they need. ■

Lexington | Defender of the faith

Raphael Warnock has a lot to teach America's political parties about reaching out



DEMOCRATS ARE celebrating Senator Raphael Warnock's victory in Georgia's run-off election because, with 51 votes in the chamber, they will have an easier time confirming judges and other appointees. Republicans should be sighing with relief they will not spend six years dreading confounding disclosures about Mr Warnock's opponent, Herschel Walker.

But the real reason to welcome this result is that Americans will get to learn what Mr Warnock might be capable of. Mr Walker was never going to be a leader of his party. Mr Warnock just might.

Mr Warnock likes to say that he is "not a senator who used to be a pastor" but "a pastor in the Senate". He is a different sort of national politician from either party has produced in a long time, heir to a spiritual tradition at odds with the politics of this era. Loving your enemies was "pressingly hard", Martin Luther King Junior acknowledged back when he was urging people to do so. Today, when Mr Warnock holds Mr King's old pulpit in Atlanta, it is heretical, if not, among progressives, downright uncool.

Mr Warnock is sometimes compared to Barack Obama, but that comparison does not penetrate far: they are both black male Democrats who speak eloquently about change. Mr Obama grew up in Hawaii and trained to be a lawyer. He is a Protestant and has sat in the pews of various denominations.

Mr Warnock grew up in the pulpit in Savannah, Georgia. He was 11 when he preached his first sermon, "It's Time I Be About My Father's Business," urging young people to do the work of faith and service. His earthly father was hauling junk cars during the week and preaching in a Pentecostal church on Sundays. By high school Mr Warnock was borrowing recordings of King's sermons from the public library and practising King's musical style. He began preaching at Baptist churches in Savannah and was drawn to their emphasis on fighting bigotry and poverty.

Mr Warnock trained in the theology of the black church, writing his dissertation on the tension between pursuing individuals' salvation—the focus of his father's church—and promoting worldly change. In "The Divided Mind of the Black Church", which grew out of his dissertation, he concludes there is no "authentic black piety that is not connected to liberation" and "theology that is not lived is not theology at all".

That is the foundation from which Mr Warnock approaches politics, and it places him at a different altitude from his colleagues. He likes to say that "democracy is the political enactment of a spiritual idea, the sacred worth of all human beings"; that "a vote is a kind of prayer for the world we desire"; that "legislation is a letter to our children." "And if we ask ourselves what we want that letter to say," he told rapt students at the Georgia Institute of Technology the day before the election, "we might actually get it right." It all sounds better when he says it, with his elongated southern vowels and commanding enunciation. He generally speaks without notes, and he radiates an unusual calm.

The only southern black Baptist minister to progress so far in politics, and a more nuanced point of comparison, is Jesse Jackson, who grew up in South Carolina, ran twice for president and served for a term in the 1990s as the "shadow senator", or nonvoting representative, from Washington, DC. If Mr Jackson imported King's message to electoral politics, Mr Warnock has updated Mr Jackson's politics with lessons learned from Mr Obama's success at not scaring white people. Mr Jackson could roar from the pulpit and podium; Mr Warnock's style is no less passionate but more gentle. In his first run for Senate, in 2020, Mr Warnock, who is 53, appeared in campaign ads as a suburban dad, walking a leashed beagle down a tidy sidewalk, loaded poop bag in hand. (It is perhaps evidence of the politician in the pastor that the beagle, Alvin, was not his dog.)

Descending from one of America's most successful radical movements puts Mr Warnock somewhat out of tune with today's progressives. The question is whether he is a throwback or the forerunner of a more inclusive, patriotic and mature politics. There is no doubting his commitment to social justice. But though he shares progressives' urgency he knows accomplishing change in America can be the struggle of generations. And while polls show many Democrats take a dim view of America, he speaks often of his love for it and his faith in its perfectibility.

One imagination, indivisible

Many Democrats also give less scope than Mr Warnock to love. Hillary Clinton dismissed some supporters of Donald Trump as "deplorables", and President Joe Biden has condemned "MAGA Republicans". That is not Mr Warnock's way. He was drawn to King, he told the students at the Georgia Tech rally, partly because "he used his faith not as a weapon to crush other people, but as a bridge to bring us together."

Mr Warnock remains pastor at Ebenezer Baptist Church, King's old church, and his first sermon after his last election came after Mr Trump's followers stormed the Capitol on January 6th 2021. He chose to try to understand them. He preached that day about what he called the violence of poverty, "a kind of violence that crushes all the humanity of poor people". Many who had embraced "the ideology of anger and old resentments and hatreds" suffered from such violence, "and somebody has convinced them that it's somebody else's fault."

It was the old strategy of divide and conquer, he continued, raising his voice and drawing out select words as he built toward his core message. "There's a kind of *violence* of poverty, a failure to recognise that there is enough in God's world for *all* of God's children," he said. "There's no *poverty* of possibility. There is a *poverty* of *moral imagination*." Now, for the fourth time in two years, Mr Warnock's moral imagination has lofted him to victory in a Republican state in the heart of the old Confederacy. ■



Canada

A bomb lodged in the constitution

MONTREAL

The obscure-sounding "notwithstanding clause" is actually rather dangerous

In November Doug Ford, the premier of Ontario, Canada's most populous province, got into a brawl. The trade union representing 55,000 janitors, teachers' assistants and other support staff in schools wanted an above-inflation pay rise of 11.7%. Mr Ford's government passed a law to impose a settlement of just 2.5% on the provincial government's lowest-paid workers. Anyone who walked off the job would be fined C$4,000 ($3,000) a day.

To make sure he got his way Mr Ford resorted to constitutional hardball. The imposed contract looked like a violation of workers' rights to bargain collectively, which is protected by the constitutional right to freedom of association. That opened it to legal challenge. In response Mr Ford's law invoked the constitution's "notwithstanding clause", which allows Canada's legislatures to override basic rights for up to five years (and to keep renewing the measure).

After thousands of workers took to the streets and unions threatened the province with a general strike, Mr Ford backed down. But his attempt to use the "notwithstanding clause"—Section 33 of Canada's Charter of Rights and Freedoms—set off shock waves that are still reverberating. The charter "cannot become a suggestion", thundered Justin Trudeau, the prime minister. Yet the clause invites norm-bending politicians to make it just that.

Canada's bill of rights was adopted in 1982 under the government of Mr Trudeau's father, Pierre, as part of the "patriation" of Canada's constitution from Britain, the final step in claiming its independence. Fearing that a written charter would empower judges at their expense, provincial premiers demanded Section 33 as a way of preserving politicians' autonomy. Constitutional scholars see it as a way of reconciling the principle of parliamentary sovereignty, inherited from Britain, with the introduction of a written charter.

Under Section 33 federal, provincial and territorial parliaments may suspend such rights as freedom of religion and speech, as well as protection from torture and unreasonable searches and seizures (but not the right to vote), if they specify what right they're overriding. A prime minister or premier with enough votes in the legislature could use it to muzzle the press, subject people to arbitrary arrest or shut down houses of worship. Brian Mulroney, prime minister from 1984 to 1993, said that Section 33 meant that the charter was "not worth the paper it is written on". No other country has such a constitutional get-out clause in Canada's expansive form.

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Not withstanding?

During Section 33's 40-year life Canada has not become a police state. Governments, thinking that voters would deem its use to be a nuclear option, have invoked it rarely. The main exception has been that of French-speaking Quebec. In 1988, after Canada's Supreme Court struck down Quebec's ban on non-French shop signs and public advertisements, the province used the clause to override the decision.

But lately the clause has been invoked more often. In 2019 Quebec's conservative premier, François Legault, used Section 33 when enacting a law that bars public servants from wearing religious symbols, which seems to be aimed at hijab-wearing Muslims. He followed up this year with a law restricting the use of English in courts and public services. The law also authorises the Office québécois de la langue fran- ▸▸

çaise, a sort of language-enforcement agency, to conduct searches without a warrant to ensure that businesses are using French in the workplace. That, too, came with the support of Section 33.

Mr Ford, a Progressive Conservative by party and a populist by inclination, was poised to use it in 2018 to reduce the number of seats on Toronto's city council. (He didn't have to; a court said he had the authority to do that.) In 2021 he invoked Section 33 for the first time in the province's history, and for a worrying purpose: seemingly to boost his chances of re-election. Facing criticism for his government's response to covid-19, he pushed through a law that tightened restrictions on campaign advertising by organisations other than political parties. The intent appears to have been to curb hostile adverts by trade unions. When a court struck down the law as unconstitutional Mr Ford enacted a new version, clad in Section 33 armour. That may have helped him win re-election in June this year, though it was probably not the decisive factor.

"For a long time it was thought that the political costs of invoking Section 33 would always be really big," says Hoi Kong at the University of British Columbia. "Governments are now testing that." Mr Ford has said that the clause is just another "tool", and that a good premier will make full use of his "toolbox".

It is not the only tool that politicians have lately used to push their powers to the limit. In February Mr Trudeau, of the centre-left Liberal Party, invoked (for the first time in the law's 34-year history) the Emergencies Act, which empowers the federal government to override laws and seize authority from provincial and local governments. The emergency in question was the blockade of central Ottawa, the capital, by a "freedom convoy" of truckers opposed to vaccine mandates and by thousands of sympathisers. Many Canadians thought Mr Trudeau was abusing his power by using the act to disperse a protest that was illegal but no threat to the state. He ended the order after nine days; in November he testified at the parliamentary review that by law must be held after the act is invoked.

And on November 29th Alberta, a western province often at odds with the federal administration, introduced a bill that would authorise its Conservative government to refuse to enforce federal laws if the legislature finds that they are unconstitutional or cause "harm to Albertans". The first draft of the bill allowed the cabinet to amend provincial laws unilaterally, but this clause is likely to be removed.

All this alarms civil libertarians. Robert Leckey, dean of the law school at McGill University in Montreal, worries about the "creeping populism" of Mr Ford and Mr Legault. What makes Mr Legault's use of Section 33 especially worrying is that he invoked it pre-emptively, suspecting that courts would rule against him otherwise.

Canada has yet to produce a Donald Trump, but it may have weaker constitutional defences than the United States if such a person appears. Section 33 "creates a vulnerability to the democratic backsliding that is occurring elsewhere", says Peter Biro, founder of a group that lobbies for its repeal. To many Canadians, the freedom convoy was a sign that populism could move north of the border. It had the support of a significant minority, and cash and encouragement from Trumpist Americans. (Right-wingers claim that the real danger to personal liberties comes from Mr Trudeau, who they say has the freedom-trampling instincts of the left.)

The repeal that Mr Biro wants is unlikely. It would require the approval of seven of Canada's ten provinces, representing at least half of the population. A more realistic possibility is that Canada's Supreme Court will put in place "guard-rails", which would bar governments from invoking Section 33 pre-emptively. Civil libertarians are hoping that when the court eventually considers a challenge to Quebec's religious-symbols law it will ban future pre-emptive uses, though it is unlikely to strike down the law itself. That might lessen, but would not eliminate, the danger that a political malefactor could use Section 33 to crush Canadians' rights. For decades they largely ignored the bomb lodged in their constitution. Now they must anxiously hope that no one sets it off. ■

Peru

Castillo the brief

LIMA

After a bungled coup attempt, Peru's president falls

In Marx's hoary phrase, history repeats itself as farce. In 1992 Alberto Fujimori, an elected president, sent tanks to shut down Peru's Congress and governed as an autocrat for the following eight years. Three decades later Pedro Castillo, the bumbling occupant of the job since July 2021, tried to do the same. On December 7th he announced that he would close Congress, convene a new one with powers to write a new constitution, and "reorganise" the judiciary and the prosecutor's office. The effort collapsed within hours.

Instead Congress voted by 101 votes to six, with ten abstentions, to dismiss him. After an emergency meeting of the high command, the police decided to arrest him for rebellion as he was being driven to the Mexican embassy to seek asylum. His vice-president, Dina Boluarte, has now taken over from him.



Time present and time past

Mr Castillo, a rural schoolteacher with no previous political experience, was elected president with a margin of just 50,000 votes (out of almost 18m). Despite coming from the hard left he won against Mr Fujimori's daughter, Keiko, who is abhorred by many Peruvians and who tried to overturn the election results with unfounded allegations of fraud.

In just 16 months in office Mr Castillo has shown himself to be unfit for the job. He has got through five cabinets and around 80 ministers; they came and went almost weekly, many of them as unqualified as the president himself. According to the chief prosecutor he and several members of his family corruptly conspired to award public contracts. He denies all allegations, and claims political persecution.

Peru's constitution allows Congress to impeach presidents for "permanent moral incapacity"; two of Mr Castillo's predecessors were booted out under this clause. Twice Congress tried to remove him under it, too. But they acted too soon, and lacked the necessary 87 votes out of the 130 legislators. The left-wing block in Congress remained solid. Others were scared to lose their well-paid jobs if impeachment were to be followed by a fresh general election, ▸▸

Bello An adiós in troubled times

In his final column, Bello reflects on how Latin America has changed

In his mind's eye as he writes, Bello can see the limitless expanse of the Pacific at Lima, the tiny fishing boats that plug across the bay in search of *corvina* and *chita*, the pelicans skimming inches above the waves, the vultures circling on the clifftop. He can glimpse, too, the sinuous roads that snake beside heart-stopping abysses as they endeavour to connect towns in the Andes, landslides permitting. He can feel the clammy heat of the dark floor of the Amazon rainforest and the arid scrub of the Brazilian *sertão*. He can see the flat emptiness of the Argentine pampas with their solitary *ombú* trees, and the soaring volcanoes of Mexico and Central America. Latin America has always been, first and foremost, about geography—stunning, bountiful, impossible and treacherous.

The books that offer a single explanation—dependency, colonialism, Iberian culture or institutions—of Latin America's relative failure are invariably wrong. Its difficulties stem from the interplay of all these factors and more. But geography, often ignored, is one, as Sebastián Mazucca, an Argentine political scientist, explained in a book published in 2021. It conspired against strong states that control their territory, obliging governments to strike pacts with local potentates at the expense of the rule of law and impartial administration.

Latin America's rich endowment of natural resources has powered booms and busts, attracted covetous foreigners and provided the broth for the red meat of populism—a blame game about why people are poor if the earth is so rich. Another geographical factor, remoteness from the main centres of the world economy, has hurt trade and investment.

When this column began almost nine years ago Latin America was advancing. Poverty was falling steadily and so was (still wide) income inequality. The lower-middle classes were expanding and democracy seemed to be putting down roots.

But this progress was flattered by a commodity boom. It soon waned. Over these past nine years the region has seen no growth in GDP per person. Investment has fallen, productivity languishes and poverty has risen again. Discontents have erupted. Political instability is increasing while seemingly immovable dictators rule Venezuela, Nicaragua and now El Salvador. Organised crime has extended its bloody tentacles, from Mexico to Chile and Paraguay.

Take a longer view, and not everything is as gloomy. Your columnist began to live in Latin America exactly 40 years ago and has done so for almost half of the period since then. Over these decades the region's societies have in some ways become more egalitarian. Nowhere else in the developing world is the idea of human rights now so widely shared.

Culturally Latin America thrives. The world is swaying its hips to Latin music.



Latin American literature has moved into the mainstream, led by a cohort of young writers, many of them women. Latin American food, from Peruvian *ceviche* to Mexican *tacos*, has carved its way onto menus around the word.

The region is more resilient than headline-writers allow. Socially that owes much to the strength of family networks and to the informal economy, although this is a drag on productivity. Macroeconomically the reforms of the 1980s and 1990s produced lasting benefits. Inflation-targeting and independent central banks have proved their worth. The region has bounced back from the pandemic slump much more quickly than, for example, Europe, even if social scars remain.

As always, the prospects are tantalising, shimmering like the mirages on the salt flats of the Bolivian Altiplano. Latin America, so vulnerable to natural disasters, will be one of the main theatres in the battle against climate change. It is set to be a key supplier for the green economy, with two-thirds of the world's lithium reserves and 40% of those of copper. It is an abundant source of food and fresh water. Nearshoring of supply chains offers plenty of opportunities. Some of geography's obstacles could now be overcome, digitally. And those imposing landscapes form identities and attract tourists.

Despite everything, Latin America remains the developing region where democracy is most widespread. Missing still are the virtues that geography has hindered and that Andrés Bello stood for: the rule of law, better public education, openness and regional co-operation. That is where the battle lies. With a heavier heart than when he picked it up, Bello is replacing his pen in its inkwell.

as many Peruvians would like. A third motion, with more support, was due to be put to a vote on December 7th, hours after Mr Castillo's ill-fated announcement.

Mr Castillo's move was "a desperate gambit by a scared and incompetent man", says a former minister. Unlike Mr Fujimori, Mr Castillo lacked support from the army and the streets. No tanks rolled in to shut down Congress. No angry mobs swarmed the chamber. Even his supporters condemned him. The armed forces, some of whose commanders went to jail after Mr Fujimori's regime ended, said in a joint statement with the police that they would not back the president. Instead, Mr Castillo provided Congress with the incentive it lacked to remove him if they want to keep their jobs. Similarly, the left would have suffered by associating itself with a move so similar to Mr Fujimori's.

There exists another precedent for Mr Castillo's actions. In 2019 Martín Vizcarra, then president, shut down Congress when it appeared to deny him a confidence motion. That was ill-advised, but there was a difference. He did not seek to tamper with the judiciary and he called an immediate election for a new Congress.

Ms Boluarte becomes Peru's sixth president since 2016. She is not widely known by the general public, but neither was Mr Vizcarra when he took office. He went on to become one of Peru's most popular presidents, only to be impeached himself in 2020. The new president is another leftist but appears to be a more competent one. Ms Boluarte would do well to form a broad-based government if she wants to see out the rest of Mr Castillo's term until 2026. Most Peruvians are relieved that this time the coup attempt failed. ■



India's development

Gujaratification

AHMEDABAD

Narendra Modi is governing India, for good and ill, as he governed his state

AGASHIYE, A POPULAR restaurant in Ahmedabad, serves only one thing: Gujarati *thali*. But the dish contains multitudes: curries, pulses, veggies and sweets, along with flatbreads, rice, salad, pickles, poppadums and more. Its fans say the *thali* strikes the perfect balance. But that depends how it is consumed. Presented with a plate featuring greens next to fried delights and thick, sweet cream, few diners choose to gorge on cabbage.

So it is with Gujarat's strangely uneven development record. Ruled by Narendra Modi's Hindu-nationalist Bharatiya Janata Party (BJP) since 1998, India's westernmost state is a great success story overall. It is the sixth-richest state and accounts for 30% of exports. Its economy grew at an average annual rate of 11% between 2011 and 2021, the fastest in the country.

It is this record that Mr Modi, after 13 years running Gujarat, stressed when he sought India's top job in 2014. Just as the *thali* contains a balance of fibre, protein and carbohydrates, his "Gujarat model" was said to be a perfect mix of good education, jobs, higher incomes and a "better life". After a decade of welfarism, state meddling and graft under the Congress party, many Indians were hungry for it.

Critics of Mr Modi pointed to communal riots on his watch in 2002 that left over 1,000 Gujaratis dead, most of them Muslims. They also noted that the state was pro-business long before he showed up. And that Gujarat's social indicators, which track changes in the lives of the poor, were far from perfect—indeed much worse than its economic ones. That seemed like a bad lookout for a country with more than twice as many very poor people as any other. Sure enough, eight years and two crushing election victories later, the hopes and fears for Mr Modi's economic stewardship have largely been realised. He and his party have taken the Gujarat model India-wide.

In the state of 62m people, where the BJP won its seventh straight election this week, social indicators still trail economic ones. On a development index that accounts for life expectancy, education and income, Gujarat ranks 21st out of 36 states and territories. It is in the bottom half of states for underage marriage, child stunting, infant mortality, and school and college enrolment. Last year its GDP per head matched Tamil Nadu's, but its share of people living in poverty, at 14%, was nearly four times bigger (see chart 1 on next page).

This reflects the Hindu nationalists' priorities. Gujarat's social spending is the lowest of all Indian states. It also directs a smaller share of its total expenditure to rural development and a larger portion to cities than the state average. Many of its rural districts lack basics such as secondary schools as a result. Meanwhile, its cities are thriving, as they like to illustrate with shiny new building projects. When the national government solicited proposals for urban-renewal plans in the early 2000s, most cities in Gujarat wanted funds for flyovers, says Himani Baxi of Pandit Deendayal Energy University in Gandhinagar, the state capital. Just one city proposed building an unglamorous but necessary sewage-treatment plant.

After a number of false starts, India's economy is also booming. On December 6th the World Bank upgraded its forecast ▸▸

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for growth this year from 6.5% to 6.9%. If that is not as fast as Gujarat tends to grow, it is faster than any other big economy. Mr Modi's highly publicised new mantra is "Together, for everyone's growth, with everyone's trust". And ambitious infrastructure projects such as highways and digitisation are, as in Gujarat, a prominent part of his plan. Most large cities now have metro lines; over 10,000km of highways are being added each year, twice the rate the previous Congress-led government managed. The infrastructure push is helping households, too. Many more now have access to bank accounts and clean fuel. Internet penetration is rising rapidly.

BJP rule has been much less successful at improving Indians' poor health and woeful education. Child-mortality rates are falling, but patchily. More than a third of children under five are stunted, a higher rate than in Bangladesh and Sri Lanka. In 2018 around half of all rural children in fifth grade could not read to second-grade levels. And after two years of school closures during the pandemic, the situation is unlikely to have improved.

These failures, again, reflect the BJP's choices. It has been more generous to India's poor than its government in Gujarat; the percentage of spending given to welfare schemes such as food and cooking-fuel subsidies is in line with the long-term average. Yet the Modi government is devoting a much smaller portion of India's bumper tax revenues to social spending, including health care and education, than its predecessor (see chart 2). In 2018-19 government spending on health represented 3.2% of GDP, down from 3.9% the year before it came to power. Spending on education, at 3.1%, is far below its target of 6%.

The poorest bits of the country are missing out most, largely because India's growth is so unequally distributed. According to official figures, unemployment in Gujarat is 2.9%; in Uttar Pradesh (UP), a poor northern state of 240m people, it is 7.1%. Yet the BJP has suffered little or no blowback in such places. This year it became the first party to win a second consecutive majority in UP since 1985. Why?

A lot of the answer is its Hindu chauvinism. In Gujarat, UP and elsewhere, the BJP has successfully presented itself as a defender of high-caste Hindus, while mollifying the populous lower castes with hate speech against Muslims and just enough welfare. Yet it also seems that Indians like its spending priorities far more than would once have been imagined.

The long-abysmal state of public services—and proliferation of private alternatives—have downgraded Indians' expectations of them. Less than a third rely on public health care. In an international survey in 2016, just 46% of Indians agreed that "the primary responsibility for providing school education rested with government", the lowest of any country polled. Meanwhile, the BJP's infrastructure projects, and relentless efforts to put Mr Modi's imprimatur on them, have made the projects and prime minister alike powerful symbols of national progress.

As anyone who has tackled a *thali* knows, to eat is to choose. And so it is to govern. Not every element of the Hindu-nationalist development policy is good for Indians. But it is fuelling their growth and keeping them coming back for more. Mr Modi's approval rating, at around 77%, may be the highest of any major world leader. His prospects of winning a third parliamentary majority in 2024 appear exceptionally strong. ■

Hard choices 2

India, central government budgeted spending

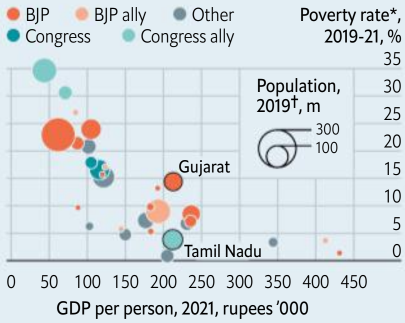
% of total



Sources: Reserve Bank of India; PRS Legislative Research; Ministry of Finance

Not a fine balance 1

Indian states, by controlling party



*Based on the multidimensional poverty index, a composite measure comprising ten indicators †Estimate

Sources: Reserve Bank of India; Oxford Poverty and Human Development Initiative; Government of India

Press unfreedom in the Philippines

Dead convicts and a peculiar murder

MANILA

It may actually be solved

PERCIVAL MABASA'S murder on the outskirts of Manila on October 3rd, while the 63-year-old radio journalist was driving to work, was barely newsworthy. The Philippines is one of the deadliest places to be a journalist: 197 have been murdered in the country since it restored democracy in 1986. Unusually, however, the investigation into Mr Mabasa's killing has produced an alleged culprit. Even more remarkably, the accused is a powerful official: Gerald Bantag, head of the national prison service.

Mr Bantag, who was questioned by prosecutors last week though he denies the crime and has not been formally charged with it, is alleged to have ordered prisoners at the vast New Bilibid Prison to arrange the hit on Mr Mabasa, after the journalist suggested he was corrupt. One of the gunmen surrendered and confessed to carrying out the hit for a share of 550,000 pesos ($9,900). He claimed it had been arranged by a convict called Jun Villamor—who was then found suffocated with a plastic bag.

But the dead inmate had left a text message naming names. Mr Bantag, another warden and ten prisoners are accused of conspiring to commit one or both of the murders. Mr Bantag has been suspended by the recently elected president, Ferdinand "Bongbong" Marcos.

Media outlets in the Philippines are still recovering from the ravages of his father, Ferdinand Marcos, who shut them down, seized their assets and hounded journalists after he imposed martial law in 1972. Press freedom was enshrined in a new constitution after he was ousted. Yet the killing of so many reporters is only one sign of official disdain for that right. Less than 10% of the crimes have been solved. Bongbong's predecessor, Rodrigo Duterte, said the slain reporters were to blame "because they extorted…or attacked their victims needlessly".

Little better was expected of Mr Marcos (whose vice-president is Mr Duterte's daughter Sara). But the investigation of Mr Mabasa's killing has raised hope. It has also unearthed other scandals at New Bilibid, including caches of weapons, the corpses of 176 prisoners, rotting in a mortuary—and, most remarkably of all, a 30m-deep hole beside Mr Bantag's residence at the jail, which appears to connect to a tunnel. Mr Bantag at first said the hole represented an effort to find a legendary hoard of treasure. On further questioning he said it had been intended for scuba-diving practice.

Toon wars

Manga v webtoons

TOKYO

Japan's cartoon books are being eclipsed by the Korean interloper

LEE HYUN-SEOK grew up in South Korea addicted to Japanese *manga* series such as "Dragon Ball" and "Slam Dunk". As soon as he could, he emigrated to Tokyo to build a successful career as a *manga* artist and editor. Then in the early 2000s came "webtoons", a South Korean cartoon innovation optimised for smartphones. Mr Lee was at first unimpressed. Compared with *manga*'s inventive graphic styles and sophisticated plots, he found webtoons crude and superficial. "I thought: 'Anybody can make this'."

Yet Japanese *manga* is being eclipsed by Korean webtoons. Last year the *manga* print market shrank by 2.3% to ¥265bn ($1.9bn). The size of the global webtoons market was meanwhile valued at $3.7bn—and projected to reach $56bn by 2030. *Manga* is gravitating to digital slowly, in part because it is still designed for print, so awkward to read on smartphones. The letters tend to be too small and the way the panels are laid out requires constant zooming in and out. Seeing which way the wind was blowing, Mr Lee abandoned *manga* for the webtoon industry in 2014.

Though webtoons such as "Itaewon Class" and "Solo Levelling" have become popular among Japanese consumers, most Japanese publishers have stuck doggedly to *manga*. "The Japanese industry is very conservative," sighs Mr Lee. "There's a strong belief that it's better to stick with precedent." The *manga* industry's business model, in which stories are first published in weekly magazines and then in books, has hardly changed since the 1960s.

Their format is also sacrosanct. Japanese *manga* hew to unique templates which require special knowledge of readers, such as the order in which panels must be read. "The only people who know how to read *manga* are Japanese, Koreans and geeks across the world," says Iwamoto Keita, who runs a cartoon studio. Webtoons have grown so fast, in part, because they can be read more easily and intuitively.

It is tempting to see the way *manga* traditionalists are ceding the global cartoon market to South Korean innovators as symbolic of a broader malaise: the sluggishness and introspection of too many Japanese firms. Other recent South Korean exports, such as the Netflix sensation "Squid Game" and BTS, a boy band, have taken the world by storm thanks to the same combination of innovation and smart marketing behind webtoons. Meanwhile, the "Cool Japan" strategy of the government in Tokyo, intended to emulate that Korean success, has been a flop. Having run up huge losses, it may soon be abandoned.

And yet, by sticking to what it does best, the *manga* industry has at least maintained its strengths. Its complicated layouts can convey sophisticated narratives. And many *manga* are artistic wonders, with designs manipulated at the millimetre level. Witness the intricate ink drawings in "Vagabond", an epic martial-arts series, or the surrealist illustrations of "Berserk", a medieval fantasy. By contrast, complex plots with dramatic twists are hard to convey in webtoons, which can display only a limited number of words. "I doubt webtoons would ever trump *manga* in terms of quality," says Mr Iwamoto.

With its strong stories and craftsmanship, *manga* maintains a loyal domestic audience, which gives publishers little motivation to innovate or change. Growth in their core business may be flagging; yet they can still find opportunities to boost revenues through *anime* adaptations, or by collaborating with businesses that create *manga*-themed merchandise. Shueisha, the publisher that produced "Demon Slayer", a recent hit *manga* and *anime*, had record sales in 2021. "There's not much of a sense of crisis among Japanese publishers," observes Nakayama Atsuo, an entertainment-industry expert.

Some still fret about the future. Japan's *manga* fans are, like all its population, ageing. The average reader of the *Weekly Shonen Magazine*, a *manga* anthology for children (*shonen* means "young boy") launched in 1959, is now over 30. "*Manga* could end up as old people's culture," warns Mr Lee. "Children these days are scrolling through webtoons on their smartphones. Why not make something that suits their taste?" ■



Dragon Ball Z is better in print

Indonesia's extramarital-sex ban

Bad news for Bali

SINGAPORE

Will Joko Widodo approve an appalling new penal code?

THE NEW criminal code that Indonesia's parliament passed on December 6th is billed by the administration of President Joko Widodo as a "gift" to the nation—a revision of a century-old colonial code that is no longer fit for purpose. As a deputy minister puts it, the new code will bring the law "in line with Indonesian values". Many Indonesians disagree. The provisions are so unpopular that demonstrations against them in 2019 led Jokowi, as the president is known, to shelve them.

A period of "socialisation" was supposed to have taken place before the new code could be reintroduced to parliament. Good luck with that: among its many harsh rules, the code criminalises cohabitation and sex outside marriage, expands the provisions for blasphemy and makes it illegal for Indonesians to leave their religion or persuade anyone to be a non-believer. It marks the most illiberal turn in Indonesia since the Muslim-majority country of 276m people embraced democracy in the late 1990s. Jokowi has yet to sign the new code into law, but has suggested he will.

Not all of the code's elements are retrograde. For example, it recommends that the death penalty should be used only as a "last resort", and allows for death sentences to be converted to long prison terms in the event of good conduct. It also reinforces, for victims of rape, an exception to the existing ban on abortion: they will be able to seek an abortion within 12 weeks of conception instead of, as hitherto, six.

For the most part, though, the code represents a very sharp turn for the worse. Criminalising consensual sex outside marriage, with up to a year in prison for those found guilty, represents a gross invasion of privacy. It could especially imperil millions of indigenous Indonesians and rural Muslims whose marriages often lack certification. The new code's defenders say it will ensure prosecutions only take place on the strength of a complaint brought by a close family member of the accused. But that creates endless opportunity for abuse. Andreas Harsono of Human Rights Watch, a pressure group, predicts the code's harmful effects will be felt especially by women and LGBT people, due to husbands reporting wives for adultery (real or made up) and family members reporting gay relationships that they dislike.

The move undermines, to an extraordinary degree, the government's stated prior- ▸▸

Banyan Karma chameleon

Which version of Anwar Ibrahim will govern Malaysia?

He was for so long Asia's prime-minister-in-waiting, it takes an effort to grasp that Anwar Ibrahim has the top job in Malaysia at last. After a general election last month produced the country's first hung parliament, its king tasked Mr Anwar with forming a government. The 75-year-old's first cabinet meeting this week is the culmination of an extraordinary political odyssey.

Mr Anwar was being talked about as Malaysia's future fully four decades ago. He had risen to prominence as a silver-tongued Islamist student leader. After joining the ruling United Malays National Organisation (UMNO), he soared. By 1993 he was deputy prime minister and heir to Mahathir Mohamad, who dominated Malaysia's post-independence story. To the delight of liberals in Malaysia and far beyond, Mr Anwar issued a manifesto, "The Asian Renaissance", that stressed pluralism, tolerance and reform.

Malaysia seemed about to fall into his lap. But he had moved too soon. Dr Mahathir fired him and in 1999 threw him in jail on trumped-up sodomy and corruption charges. Mr Anwar was eventually freed and he returned as leader of a multiracial opposition, with a slogan of *reformasi*. UMNO hounded him again. By 2015 he was back in prison on a fresh charge of sodomy. From there he contested the 2018 general election in league with his nonagenarian sometime nemesis, Dr Mahathir, who had come out of retirement to bring down his former party. The pair accomplished that and Mr Anwar was pardoned. Dr Mahathir was to be prime minister for two years, before handing over to him. Instead, true to character, Dr Mahathir reneged on the deal, leading to the mounting political chaos that yielded last month's election.

Mr Anwar's struggle is inspiring. But it is not an entirely reassuring springboard for government. A martyr's vanity helped him endure. So did a chameleon's ability to match his message to whatever his audience wanted to hear. His readiness to embrace those who epitomised everything *reformasi* was not created tensions even within his family. One of his two deputies, the president of a much-reduced UMNO, faces 47 corruption charges. And though he presides over a largely secular coalition incorporating Malaysia's ethnic-Chinese and -Indian minorities, he is already throwing sops to the increasingly Islamicised Malay majority, such as cutting back the state lottery. To what end is he making such compromises?

His wider platform, which is big on gestures such as cutting ministers' pay (though they can keep their lavish expenses), does not look like the *reformasi* he once championed. And heaven knows the need for it still exists, given race-based policies favouring Malay businessmen, plummeting educational standards and an economy in a rut. Nor does appointing himself, even if temporarily, as his own finance minister scream reform—though perhaps it is better than that crucial position falling into the grubby hands of one of his coalition partners.



Mr Anwar's fans are all too used to disappointment. But at least credit him for understanding that the election, as Bridget Welsh of the University of Nottingham Malaysia puts it, has done more to illustrate Malaysia's deep problems than to resolve them.

The opposition Malaysian Islamic Party, which wants to replace the country's Westminster-style government with an Islamic state, is now the biggest party in Parliament. Its unexpected surge has deepened a divide between conservative Muslim Malays and an alarmed alliance of urban middle-class Malays and minorities. The multiracial and tolerant societies of Sabah and Sarawak on the island of Borneo represent a new, third political pole, argues James Chin of the University of Tasmania. Many in those states deplore the rise of political Islam and are chafing under the federal system.

This is the broken ground that the new prime minister must pick a way through. It helps that he has declared his a "unity" government (his other deputy is from Sarawak, a first). It also helps that everyone from the king down is exhausted by the political chaos. Though the election campaign was vitriolic, power transferred peacefully. That is not nothing. Political elites on all sides have had to make painful compromises—starting with the king, no fan of Mr Anwar.

So his first months in office may be relatively calm—bread-and-butter issues, he says, will be his priority. After that, who knows? Yet it is possible to hope that this smooth-talking opportunist, once a liberal, could nudge Malaysia down a better, more tolerant path.

▸ ity of attracting "digital nomads" and international tourists—upon which parts of the archipelago such as Bali already depend. It also seems likely to produce an uptick in child marriages, as a preemptive measure undertaken by parents to stop their offspring having premarital sex. The new code also makes it much harder for NGOs to dispense contraceptives and demonstrate how to use them, a move hardly in line with official efforts to combat the spread of HIV/AIDS. Other provisions criminalise sorcery and black magic.

The code also includes anti-defamation provisions against the president, state institutions and even Pancasila, Indonesia's state ideology that supposedly emphasises humane consensus. And it recognises the importance of "living law", whatever that might be. The best guess is that it refers to local sharia-type regulations forcing women to wear the *hijab,* for instance, or encouraging girls' genital mutilation.

Overseas, Jokowi, who recently hosted a successful G20 summit, is keen to be viewed as a tolerant, even secular, Muslim leader. Back home, that does not play at all well among Islamic conservatives, who represent an increasingly powerful voting block. Jokowi's vice-president is a top Muslim cleric. True, the president has moved against radical Islamists, banning two big Islamist populist groups. Yet the new criminal code is itself a populist sop to conservative Muslim sentiment.

It is not due to take effect for three years, by which time Jokowi, who is forbidden by the constitution to seek a third presidential term, will not be in office. Yet his name, assuming he signs the new code into law, would be on it. It would be a disgraceful legacy. ■

Cross-border gambling

China's cash gift to the rest of Asia

SINGAPORE

Xi Jinping wants to stop Chinese high-rollers rolling abroad

James Packer, an Australian casino tycoon, illustrated his industry's biggest opportunity with a statistic: 80% of Chinese travelling abroad for the first time visit a casino. In a society that loves to gamble, the Communist Party has for decades bottled up demand by banning the practice, with the paltry exception of China's state lottery. And as more and more Chinese have become rich enough to travel, that pent-up demand has burst across Asia and beyond. "China's middle class will change the world," Mr Packer predicted.

It has transformed Asia's gaming industry. Most of the 340 or so casinos in South-East Asia were set up with the explicit aim of luring Chinese gamblers. And many have enjoyed a bonanza: an estimated 1trn yuan ($144bn) in gambling money leaves the Chinese economy every year.

Much of Asia's gaming growth took place in Macau, which preserved its status as an offshore haven for Chinese gambling after its emergence from Portuguese rule in 1999. But the growth has been widespread. Ben Lee, head of iGamiX, a gaming consultancy, seems almost misty-eyed as he recalls the arrival in Australian casinos of the first high-rolling Chinese tourists: "All of a sudden the whales from South-East Asia were nobodies."

Everyone wanted a piece of the action. Singapore legalised gambling and in 2010 opened two casinos, which raked in stratospheric profits. In 2016 Japan unbanned casinos, although its first new one will not open until the second half of the decade. Even Vladivostok devised plans to become a Russian Las Vegas for Chinese gamblers. Several Asian countries, meanwhile, took steps to protect their own citizens from the fleecing they planned for China's; Japan and Singapore introduced rules to restrict access to the new gambling dens.

Yet the Chinese money tree looks increasingly imperilled, not only because, with the country's borders still sealed, far fewer Chinese are travelling abroad. As well as offending Chinese puritans, gambling is responsible for an estimated fifth of illegal capital flight out of China. Under Xi Jinping, China is therefore trying with increasing vigour to extend its curbs on gambling to the cross-border variety.

Mr Xi has told Macau's casinos to pivot to shopping and conferences. He has tightened money-laundering controls and squeezed the "junket" agencies that help gamblers dodge China's strict capital controls. Anyone who helps a Chinese citizen gamble abroad faces up to ten years in jail. With Chinese gamblers now largely absent, Asia's casinos are hoping to diversify. Ciarán Carruthers, the new boss of Crown Resorts, says it aims to lure more punters from Japan, Korea and South-East Asia.

But it is hard to control the Asian industry from Beijing. As laundering money in Macau has become trickier, Chinese-owned casinos have appeared in less-regulated places south of China. The number of casino licences granted in Cambodia grew fourfold between 2014 and 2019. The centrepiece of the Golden Triangle Special Economic Zone in northern Laos is the Kings Romans Casino, a vast building with Greek-god statues and chandeliers. It is owned by Zhao Wei, a Chinese citizen under American sanctions, accused of being a transnational crime boss. (Mr Zhao, who denies the charge, calls the sanctions a "hegemonic act of ulterior motives".)

Kings Romans Airbase?

Not all casinos rely on Chinese foot traffic. Many Cambodian and Filipino casinos double as production studios for online gambling, targeting Chinese gamblers in their homes. They might, for example, sell the livestream of a baccarat game to a middleman, who places it on websites hosted in Hong Kong. By constantly changing the web address, such operators can stay ahead of China's internet police.

Doing so requires recruiting an army of Chinese "telemarketers", who sit on their phones dropping the latest web address into group chats and social-media comments, along with a glowing endorsement. More than 200,000 Chinese workers ply this trade in the Philippines, which legalised online gaming in 2016. Yet that supply of imported labour has dried up during the pandemic. Many Cambodian virtual casinos have therefore started virtual scamming: they recruit workers from countries other than China under false pretences and force them to commit cyberfraud.

The big question for Asia's casinos is not merely how soon China will let its citizens travel abroad, but how far it will go to prevent them gambling there. It has already threatened to blacklist countries that allow Chinese visitors to gamble. This helped persuade Cambodia to stop issuing licences for online casinos in 2019. In September the Philippines, where the gambling boom has generated little tax revenue and a lot of crime, said it would close 175 e-gambling operations and deport 40,000 Chinese workers involved in them. China's authorities are increasingly trying to get such Chinese expatriates arrested and deported. Last year they arrested 80,000 people in China deemed to be involved in cross-border gambling.

Yet not everything about China's offshored gambling problem harms its interests, says Jason Tower of the United States Institute of Peace. With the benefit of great hotels, airports and other infrastructure, Chinese casino hubs could help China exert its influence in Asia more broadly.

On the Cambodian coast in Dara Sakor, for example, what was once thick jungle is now a vast Chinese gambling development. Cambodia has leased a fifth of its coastline for 99 years to a mysterious Chinese firm that has built several casinos, as well as a golf course and 3,400-metre runway. Who knows? One day it might make a splendid Chinese military base. ■



Chinese tourists seeing the world



The zero-covid policy

Dismantling the machine

BEIJING

China is loosening restrictions, even though covid-19 appears to be spreading

According to the official data, the latest outbreak of covid-19 is waning in China. The number of new cases has fallen recently, to fewer than 30,000 a day, from a peak of more than 40,000 in November. But fewer people are being tested. Anecdotal evidence suggests that, actually, more Chinese are catching the disease, raising fears of a big wave.

Far from locking down, though, China is largely ditching its "zero-covid" policy. That effort relied on three main mechanisms to contain outbreaks. On December 7th the government announced that all of them are being dismantled.

The first mechanism was mass testing, which aimed to find infections fast. People were shocked to see testing booths being removed from city streets recently. A negative test is no longer required to travel within China. If the new guidelines are followed, only care homes, schools and hospitals would still seek proof of a result. Some cities are even discouraging people from getting tested unless they are in professions such as medical work.

The second mechanism, centralised quarantine, strived to isolate the infected and their close contacts. Until recently these unfortunate souls were dragged off to state-run centres. Buying a self-testing kit would have triggered a call from authorities. Now, though, people with mild symptoms and their close contacts can isolate at home and test themselves. They no longer need to regularly log their location on government apps either.

Lockdowns were the final and perhaps harshest mechanism. They, too, are slowly being lifted. Nomura, a bank, estimates that on December 5th some 452.5m people were affected by various lockdown measures. That is still a big chunk of China's population (1.4bn), but it is down by 760,000 from the previous week. Large cities are leading the way. Guangzhou, a metropolis in the south, has lifted many restrictions, despite being in the middle of an outbreak. Residential compounds in Beijing, which just weeks ago were putting up steel barriers, are now open. The new rules say that if lockdowns are deemed necessary, they should be imposed on buildings or smaller units, not compounds, neighbourhoods or cities.

China's propaganda is changing to match the new policies. The virus was long portrayed in state media as a terrifying illness, each case a threat to public health. Until late November, the nightly news devoted regular segments to the devastation covid had wreaked on America, which has recorded over 1m deaths from the virus. Long covid, the drawn-out symptoms of the disease, was "tearing apart American society", newsreaders claimed.

Few, if any, such segments have aired this month. Instead state media are saying that the Omicron variant is not so scary after all, pointing to the low number of deaths and severe cases it has caused so far in China. State newspapers have begun publishing interviews with doctors who say there is "no evidence" that long covid exists. A well-known nationalist commentator, Hu Xijin, said on social media that he is "mentally prepared" to catch the disease within a month.

Why is this all happening now? During the first two years of the pandemic, the zero-covid policy kept the economy growing by allowing most of the population to live normal, virus-free lives. But the spread of ▸▸

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Omicron means more people have been caught in the zero-covid web. The economy has slowed as a result. Everyone is frustrated, from migrant labourers to middle-class city-dwellers. Last month there were rare, politically charged protests against zero-covid in several cities.

Still, the timing has puzzled observers. China's undervaccinated elderly population is vulnerable (see next story). Hospitals will soon be under strain from the flu. And in the coming weeks millions of Chinese will travel home for the lunar new year, potentially spreading the virus into rural areas with threadbare medical systems. Given China's current state of preparedness, our modelling suggests that if the virus spread unencumbered, hundreds of thousands of people would die.

Anger and angst

Some people are angry at the government's brazen about-face. "They'll do whatever they want. The so-called 'relaxation' could be reversed tomorrow," says a resident of Shanghai who took part in the protests. "Even if our resistance made them change policy, they don't think that they did anything wrong. It's absurd."

Others are concerned. "We've been under pressure for so long…everyone is still a little worried and unsteady," says Long Ye, a café owner in the city of Chongqing, which recently lifted restrictions despite logging thousands of new cases a day. Mr Long expects cases to surge. "It is fear of the unknown," he says, adding that he is uneasy about the health of his elderly relatives.

Rather than enjoying their new freedoms, many people are preparing for a wave of infections. In Beijing, streets and malls are still fairly empty. People out in public now favour tightly fitting N95 masks, rather than flimsier surgical masks. The price of a herbal medicine used against covid (with doubtful effectiveness) has shot up in some pharmacies.

It will take time for local governments to unwind restrictions. In some places, such as those with weaker hospitals, officials may drag their feet. The authorities in some big cities, like Beijing, are keeping testing requirements that the central government called for scrapping.

Elsewhere in the capital, the focus is on messaging. Big policy changes might imply that the Communist Party got something wrong. Changing zero-covid is especially tricky, as it is one of President Xi Jinping's trademark policies. So the shift is being portrayed as building on past victories. "Practice has fully proved that the guidelines and policies for epidemic prevention and control…were correct, scientific and effective," said a recent commentary published by the official Xinhua news agency. "The most difficult period has passed." That remains to be seen. ■

Vaccinating the vulnerable

Obstinate elders

Getting old people jabbed has been slow work. It needs to speed up, fast

WHEN OTHER countries set about vaccinating their populations against covid-19, they began with those most likely to die from the disease. China did the opposite. Instead of focusing on the elderly and people with medical conditions that made them more vulnerable, it started with healthy working-age groups. When officials began paying more attention to getting older people jabbed, they were cautious, fearing side-effects. Now, belatedly, they see the urgency of the task.

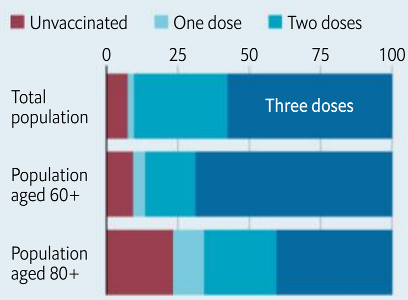
As China drops many of its harshest pandemic-related controls, infections will surge. Ensuring that older people are fully vaccinated and up to date with booster shots will be critical to keeping deaths to a minimum. The country is still far from achieving the level of protection it needs. Of about 260m people over the age of 60, 86% have been vaccinated with at least two doses and 69% with three (see chart). But in many cases, those jabs were given months ago, and their effects are wearing off. The numbers look even more alarming among people over 80. Only 40% have had three shots. In England, by contrast, about 80% of people over 80 have had a booster within the past three months.

Only in the past few days has China's government begun showing signs of alarm about this. On November 29th the National Health Commission issued a directive calling on officials to "speed up" vaccination work among the elderly, especially those over 80. It said the gap between the second and third jabs should be shortened from six months to three. The "whole of society" should be mobilised to ensure that the elderly get their shots, it urged. *Caixin*, a magazine in Beijing, says officials have been told to ensure that 90% of people over 80 have had at least one shot by the end of January, up from 77% in late November.

An old problem

China, covid-19 vaccination status

November 29th 2022, %



Source: National Health Commission

It will be a hard slog. When the government launched its vaccination drive in 2021, doctors often advised old people that it would be too risky to get jabbed if they had common ailments such as high blood pressure or diabetes. This hesitancy was caused by a lack of data at the time about possible side-effects among the elderly of Chinese-made vaccines (mainland China does not allow foreign ones to be used). Older people had been underrepresented in trials. Although such fears have dissipated among experts, they have persisted among the elderly. It may not help that the state still suggests not getting jabbed if underlying health conditions display "acute" symptoms—a term not defined.

Most older people in China have had little experience with vaccines since childhood. They have to pay for seasonal flu jabs. Most do not bother getting them. China's woolly statistics obscure the deaths that result (see Chaguan). For treating and preventing disease, many prefer traditional remedies using natural ingredients, even though the effects of these are unproven. The government hails them as proof of ancient Chinese wisdom. It lists several such concoctions among its approved treatments for covid symptoms. When Hong Kong suffered a surge of covid early this year, mainland officials sent care packets to the city's residents. They included one of the authorised medicines, containing the roots of liquorice and rhubarb.

Hong Kong's experience of that surge showed the risks that the rest of China now faces. Like the mainland, the territory had been trying—with much success—to crush covid rather than find ways of living with it. Then came the highly infectious Omicron variant, the same one that the mainland is now struggling with. Thousands of people, mostly elderly citizens who had not been fully vaccinated, were killed by the disease. Hong Kong's death rate from covid became one of the world's highest.

As it winds down its zero-covid policy, China may find that rising infections encourage more of its elderly to get jabbed. By stopping large-scale lockdowns, mass testing and obligatory segregation in state facilities of infected people and their contacts, the country should be able to redeploy its armies of pandemic personnel to the mission of delivering vaccines. But the attitudes of officials and the public alike may prove hard to change. On December 7th the Communist Party mouthpiece, the *People's Daily*, published an article about how sufferers of chronic diseases should respond to infection with covid. It did not mention the importance of getting vaccinated before that happens. ■

Dissidents v censors

Good, good, good

How Chinese netizens breached the great firewall

In April a young Chinese painter in Italy began using Twitter to publish content forwarded by censor-wary netizens in China. For much of the previous year, he had done the same on Weibo, a Chinese social-media platform. But he moved to Twitter after Chinese authorities closed his Weibo accounts. For the first few months, his posts were not widely read. Twitter is blocked in China. And he tweets in Chinese, limiting his foreign audience.

Yet his account, "Teacher Li Is Not Your Teacher", became a critical conduit for information about the protests against covid-19 restrictions that erupted across China last month (one is pictured). Participants and spectators sent him loads of images and eyewitness accounts by direct message. By reposting many, he played an important role in conveying the scale of the unrest to others, in China and abroad. He also gained almost 600,000 new followers and 387m visits to his Twitter profile in November alone.

Teacher Li's account was just one manifestation of the biggest breach in China's internet controls since they began in the late 1990s. Public anger has flared online before, but never coalesced into widespread physical protests. Now cyber administrators are scrambling to plug holes in the "great firewall", lest a new surge of covid leads to more digital dissent.

One reason for last month's breach was the sheer volume of people involved. The great firewall automatically blocks politically sensitive terms and many foreign sites, including news outlets, search engines and social media. China also mandates domestic technology firms to employ armies of censors who screen user-generated content using frequently updated lists of restricted words and images.

But the deluge of information posted in late November—featuring different activities and slogans—appears to have overwhelmed both algorithms and human censors. Many people in China learned of the protests from local messaging apps, where images and comments were often copied or downloaded before censors could delete them, and then reposted multiple times.

Eric Liu, a former Weibo censor, says that China's bureaucracy is so centralised that when unfamiliar threats arise, sensitive information can spread widely while censors await official orders. "With this level of protest every bureaucrat is afraid to make a decision for himself," he says.

Other industry insiders suggest that some Chinese tech companies' spending on in-house censorship has been constrained by financial difficulties since a crackdown on the sector began in 2020. Chinese authorities have now ordered them to boost their censor cohorts and pay closer attention to protest-related content, the *Wall Street Journal* reported.

Chinese netizens are becoming more inventive, too, posting political messages on dating sites or in the comments section of otherwise uncontroversial content. Artificial intelligence does not spot sarcasm easily, so under official posts on social media, many left messages simply repeating the Chinese word for "good". Others posted images of blank white sheets of paper.

Then there are foreign social-media accounts like Teacher Li's, which aggregate and amplify information sent from China. While Chinese authorities and their proxies cite that as evidence of "foreign forces" fomenting unrest, researchers suggest it is driven more by Chinese nationals abroad, especially students, and people within China who use virtual private networks (VPNs) to circumvent the great firewall.

China lets businesses use licensed domestic VPNs. But many Chinese have illicit ones and, though numbers are hard to measure, researchers cite a recent uptick in demand (not least from students studying at home). Xiao Qiang of the University of California, Berkeley, estimates that 10m people are using VPNs daily in China, up from about 2m at the pandemic's outset.

There are also signs of more Chinese joining Twitter (using VPNs) but communicating only via direct message. Twitter does not share the number of users in China, but Zachary Steinert-Threlkeld of the University of California, Los Angeles, estimates it rose by around 10% in early 2020 as people sought covid news. He also noted an increase in Twitter downloads during the protests. "If I had to bet, I would say more people are using Twitter now than two months ago, but they are being very cautious with their behaviour," he says.

Chinese authorities appear alarmed, particularly by what they call the "backflow" of information from abroad. On November 28th the government's internet watchdog declared a "Level 1 Internet Emergency Response", requiring the highest level of content management. It ordered Chinese e-commerce sites to curb sales of censorship-circumvention tools, including VPNs and foreign Apple accounts (which enable downloads of apps forbidden in China). It also instructed Chinese tech firms to scrub user-generated advice on "jumping" the great firewall.

At the same time, Chinese authorities are using more intrusive methods that span the digital and physical worlds. Police have searched handsets for banned apps or protest-related images and contacted protesters identified via mobile-phone location data. Teacher Li says police have visited his parents in China several times, presenting them with a list of his tweets as "criminal evidence" and threatening to block them from sending him money. "The psychological pressure is great," he says. "But this account isn't just about our family. It's about the well-being of countless Chinese people. So I won't stop." ■



Lights, cameras, action

Chaguan | The politics of death in China

How will the party pivot from boasts about low covid death tolls?



For nearly three years, China's rulers have built harsh pandemic controls around a stark offer to their people: at the cost of individual liberties, privacy and dignity, we will keep you alive. Communist Party leaders called their "zero-covid" campaign an "all-out people's war". Their favourite battle cries emphasised China's low pandemic body count, especially in contrast with far higher death rates in America and other liberal democracies.

Even in recent days, as it became clear that the party is losing its unwinnable war with covid-19, senior officials dug in more deeply. Like generals facing defeat in a bunker, they redoubled their promises of victory, declaring the saving of lives to be the ultimate test of a political system. On November 29th, just one week before the central government all but abandoned its zero-covid campaign, the foreign ministry's chief spokesperson, Hua Chunying, tweeted out a reckoning of what she termed "the price of 'freedom' in the US". She listed American casualties with cold precision: 1m fatalities from covid, 40,000 annual gun deaths and 107,622 fentanyl deaths in 2021 alone. "The American people deserve something far better than that. What we want is to protect our people's lives and ensure them a better life," wrote Ms Hua.

Diplomats in Beijing were appalled by Ms Hua's scornful accountancy of death, and in particular her reference to Americans killed by the synthetic opioid fentanyl. That is a scourge fuelled by a trade in smuggled Chinese precursor chemicals that authorities in China seem unwilling or unable to stem, despite years of pressure at the highest level. The American ambassador, Nicholas Burns, lodged a protest with senior foreign-ministry officials.

Ms Hua is feted by nationalists for her caustic tone with the West. But all arms of China's propaganda machine have spent the pandemic depicting democracies as too decadent to protect a basic human right, life. On the same day as Ms Hua's tweet, the main evening TV news programme, "Xinwen Lianbo", broadcast images of American misery that it has shown many times before during this pandemic: ambulances arriving at hospitals and sick Americans on respirators. An anchor recited America's latest covid toll and explained that hospitals in that country also face surging influenza cases. Propaganda works. Take the grey-haired Beijinger who was out for an evening stroll in late November when he came across a rare protest in the capital. He berated youngsters for lighting candles for victims of pandemic lockdowns, from families reportedly trapped in a burning apartment block behind sealed fire exits, to children denied life-saving hospital care. Noticing foreign reporters at the scene, the old man rounded angrily on Chaguan, asking what China has to mourn. How many died of covid in America, he demanded to know? And how many in China?

Those two numbers—over 1m pandemic deaths in America, versus an official toll of 5,235 in China—are political totems, cited by many Chinese without prompting. Now, as they abandon zero-covid without proper preparations, officials need a new message. Suddenly they have begun talking up the mildness of new Omicron variants, as if China is about to enjoy a hard-won victory lap. That ignores the dangers that Omicron poses to the vulnerable, notably to undervaccinated old people, who abound in China.

To predict how the party may navigate this perilous moment, it is worth remembering that deaths can be recorded in different ways. Death can be a statistic, and also the saddest and hardest-borne of human events. Statistics hold little fear for China's leaders. To burnish its ideological legacy, the party has erased tens of millions of dead from history. It under-counts Chinese casualties in the Korean war, and denies the suffering of many killed by purges, man-made famines and mobs during the Mao era. Other deaths are too inconvenient to mention. For all the party's boasts of putting lives first, leaders say remarkably little about the million Chinese killed each year by tobacco, perhaps because cigarettes are a huge source of taxes. Some deaths are a state secret. China does not report execution statistics (nor is it transparent about the sources of organs used for transplants, though it claims to have stopped harvesting body parts from executed prisoners).

Many outsiders disbelieve China's covid statistics. There are two responses to that. One, the virus really was relatively rare in China for much of the pandemic. Indeed, officials had incentives to be transparent about infections they found, because contact-tracing required it. Two, the death numbers do look odd. China recorded over 500 covid deaths in 2022 but just two in 2021. Between May 26th and November 19th this year China reported hundreds of thousands of covid infections, but not a single fatality.

As zero-covid ends, secrecy will increase

China generally under-counts deaths from all manner of infectious diseases. In part, weak hospitals simply fail to test sick people for some diseases. In part, infectious diseases that threaten social stability are viewed in China as a question of national security, says Mai He, a pathologist at Washington University in St Louis. Methodological quirks play a role. Patients often die of several things at once and Chinese doctors typically put chronic conditions, such as heart disease, on death certificates. China routinely reports just a few dozen fatal cases of seasonal influenza each year. Reputable studies put China's annual flu toll at perhaps 100,000.

If dry statistics can be manipulated, hiding the human toll of a deadly exit wave from zero-covid would be harder. Should hospitals be overwhelmed or panic grip communities, smartphone videos will go viral, despite the censors' efforts. After failing to prepare for an opening, expect the party to claim credit for restoring long-constrained freedoms. Some Chinese will accept that abrupt shift in messaging. Others may remember being told for two-and-a-half years that the avoidance of preventable deaths is the mark of true leadership. The party claimed victory prematurely in a war that could not be won. China's people will pay the price. ■

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Renovation required

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Wanted: an Italian Thatcher

Giorgia Meloni's new government must make deep reforms if Italy is to regain its lost vitality, argues John Peet

It is surely impossible not to have a good time in Italy. It is one of the world's most beautiful countries, with much of its best food and wine. It has an enviable climate, yet is surprisingly varied geographically. The infrastructure, especially high-speed rail, has vastly improved (and the trains usually run on time). As a destination for the discerning tourist, it is second to none.

Italy's artistic assets are as impressive. Italians like to claim that they possess 60% of the world's culture. The country has more UNESCO world-heritage sites than any other. No wonder it has been one of the world's most popular destinations ever since rich Britons undertook their grand tours in the 18th century. Its glories range from Giotto's frescoes in the Scrovegni chapel at Padua to the mosaics of Monreale Cathedral outside Palermo; from Leonardo's "Last Supper" in Milan to the sassi at Matera; from St Mark's Basilica in Venice to Pompeii's Roman ruins by Vesuvius.

Even the economy seems healthier than a few years ago. The covid-19 disaster of 2020 hit Italy early and hard, but the country has since bounced back impressively. This year it is likely to have outgrown France and Germany simultaneously for the first time in 30 years. A big slug of money secured from the European Union's next-generation fund is underpinning a new reform effort. Entrepreneurs in Italy seem happier than for several years—even if many economists remain gloomy about the future.

Sadly it is the economists who are closer to the reality. As in the rest of Europe, Italy's immediate prospects are dire. A revival of inflation to double figures, rising interest rates, an upsurge in energy costs and Russia's war in Ukraine are likely to tip the euro zone into recession in 2023. But what makes things worse for Italy is that its long-standing economic weaknesses always leave it more vulnerable than its neighbours to external shocks.

A list of those weaknesses is telling. The public debt is almost 150% of GDP, making Italy the third-biggest debtor in the OECD after Japan and Greece. The employment record is poor. Female participation in the workforce is the lowest in the EU, and the share of young people not in employment, education or training the highest. Education results are bad. And the demographic outlook is grim: Italy has the second-lowest birth rate in Europe, and one of the fastest-ageing populations.

The business climate is not good, either. Italy has a plethora of small firms, but remarkably few large ones. It scores worse than any other western European country in the most recent World Bank index for the ease of doing business. Foreign direct investment is shockingly low for a G7 country. Italy spends barely 1.5% of GDP on research and development (R&D), half as much as Germany does. Despite recent improvements, the public administration remains both too large and too inflexible. And Italy suffers more than most EU countries from a high level of corruption and a large black economy—especially in the south, one of Europe's least developed regions.

The consequence of these ills is telling. GDP per head in Italy has hardly increased in real terms since 2000, the worst performance of all in the OECD club of mostly rich countries. When ▸▸



Beauty and poverty together

Europe has grown, Italy has tended to grow more slowly; when Europe has fallen back, Italy has tended to fall back more. Calculations by Andrea Capussela, an economist, in his book "The Political Economy of Italy's Decline" found that total factor productivity, a broad long-term measure, has actually declined over most of the period. Italy has already been overtaken by Spain in real incomes per head. If current trends persist, it will be overtaken by Greece and some east European countries within 30 years.

The economic and administrative reforms made under Mario Draghi's government, which took office in February 2021, have begun to ameliorate some of these chronic weaknesses—one reason why *The Economist* chose Italy as its country of the year in December 2021. But implementation of the reforms has barely begun and there is a long way to go. And now the Draghi government has gone. Its replacement after the early election on September 25th is a right-wing coalition under the prime ministership of Giorgia Meloni, leader of a previously tiny party, the Brothers of Italy (FdI), which came top of the poll with a 26% vote share.

Ms Meloni's election victory prompted much hand-wringing around the world about her far-right background, almost exactly 100 years after Benito Mussolini's march on Rome. The FdI grew out of the post-war neo-fascist MSI party. Some members, including Ms Meloni herself, have at times waxed nostalgic about the Mussolini era. Her choices for president of the Senate and speaker of the Chamber of Deputies were controversial hardliners. She and her party have put much emphasis on the family and Roman Catholic values. They are dubious about advancing gay rights, shelter an anti-abortion wing and are markedly hostile to immigration. As Fabrizio Tassinari of the European University Institute in Florence puts it, she may be Italy's first female prime minister, but she is not its first feminist one. And she is a longtime Eurosceptic.

Yet Ms Meloni has been careful to play down her party's roots, insisting that she is merely a "conservative". She says she has no plans to roll back abortion laws or gay rights. She has also assembled her government cautiously, giving the finance portfolio to Giancarlo Giorgetti, a veteran of past budget battles, and the foreign ministry to Antonio Tajani, a former European commissioner and past president of the European Parliament. And though Ms Meloni is clearly more Eurosceptic than Mr Draghi, she has dropped any talk of leaving the euro or the EU. She may instinctively support Hungary and Poland in their fights with the EU, but she is also courting Brussels, not least to keep its cash flowing.

The bigger worries about Ms Meloni's government do not stem from her party's origins. One is its durability. Few Italian prime ministers last more than a couple of years. She may be the first to win the job through election in 14 years, but she still needs support from two other parties: Matteo Salvini's League and Silvio Berlusconi's Forza Italia. The right in Italy is better at sticking together than the left, but sniping has begun. Mr Salvini wanted the interior ministry but was fobbed off with infrastructure. Mr Berlusconi has backed Vladimir Putin against Ukraine, and seemed to criticise Ms Meloni as self-important, bossy and arrogant.

Persona incognita

Ms Meloni has been admirably forceful in response, making clear that she is not to be blackmailed and that she shares Mr Draghi's fulsome support for NATO, the Atlantic alliance and Volodomyr Zelensky, Ukraine's president. But a second concern is her sheer lack of experience. She was a junior minister under Mr Berlusconi in 2008-11 but has otherwise done little outside party politics. Her party contains few heavyweights or well-known figures. She seems to rely on a small group of advisers who, like her, have limited experience. Roberto D'Alimonte, a politics professor at LUISS University in Rome, calls her "persona incognita".

This would matter less if Italy were in better shape. But in fact it faces a continuing need for tough and controversial reforms that can realistically be pushed through only by a government with both the ability and the will to tackle Italy's dense thicket of vested interests. Lorenzo Codogno, a former senior Italian treasury official who has just co-written a book, "Meritocracy, Growth and Lessons from Italy's Economic Decline", says that what the country really needed was ten years of Draghi-led reforms, not the 21 months that it actually got.

The EU's recovery and resilience programme, with its milestones of legislative reforms required to release tranches of money, may box in the new government for some time. But Ms Meloni is already suggesting the programme needs to change, for instance to respond to the energy crisis and the effects of the war. And experience suggests that implementation of reforms matters more than legislation. This requires a government that understands the need for deep change, not one reluctantly pushed into it only by outside forces. What Italy needs is its own Margaret Thatcher, ready to fight for unpopular reforms against the establishment.

Sadly, there is little sign of this. Italians may fret about their lives, but they do not feel a sense of crisis. And Ms Meloni has more often supported than challenged the privileged groups that fend off competition and hold back growth, from taxi drivers to holders of beach concessions. Instead she displays a nationalist and protectionist streak in opposing foreign acquisition of Italian assets. The watchwords of her government seem to be clientelism and corporatism, not competition and free markets.

This requires a government that understands the need for deep change

Yet it is more competition that Italy needs, not more protection. To see why, it is worth looking at what went wrong with an economy that for the 50 years up to the 1990s was one of the fastest-growing in the OECD, only over the next 25 to become the slowest-growing of all. ■

The economy

The cost of vulnerability

How a mix of the euro, the financial crash and covid-19 damaged Italy

LOOKING BACK, what is remarkable is how robust the Italian economy was from the 1950s to the 1990s. A large part of the story was simple catch-up. When six countries met in Rome in 1957 to sign the treaty establishing the European Economic Community, Italy was by far the poorest member, so it became a net recipient of money from Brussels. Yet it had a long tradition of high-quality (if usually small-scale) manufacturing, especially in the north. It soon turned into the bloc's lowest-cost maker of a host of goods, ranging from cars and machine tools to refrigerators and washing machines. Migration of low-productivity farm employees (still 30% of the workforce in 1957) to higher-productivity manufacturing and services did much to pep up growth. By 1987 Italy was able, more or less convincingly, to crow about *il sorpasso*, the moment when it celebrated overtaking Britain in real GDP per head.

Yet catching up is a lot easier than forging ahead of the pack. By the late 1990s, Italy was no longer a net recipient of EU funds. Its unit labour costs had climbed towards, or even above, the bloc's average. A country with traditionally low investment, a relatively small capital stock, a high public debt and a much diminished farm sector found it hard to sustain the high productivity growth that it had managed throughout the 1960s and 1970s. Previous advantages such as Italy's vibrant small family-owned firms started to seem like disadvantages instead.

Into this unpromising environment came the first of a series of external shocks. One of the earliest was entry into the European single currency, the euro, in 1999. Germany had more or less designed the 1992 Maastricht treaty's convergence criteria to keep out a profligate, chronically indebted Italy. The treaty tests of a budget deficit no bigger than 3% of GDP and a public debt converging towards a ceiling of 60% of GDP seemed impossible for Italy to pass by 1999. But when it became clear in 1997 that Spain was determined to join from the start, Romano Prodi, then Italian prime minister, decided that Italy, as a founder member of the bloc, must be there too. That Belgium also had a public debt above 100% of GDP helped, as did a special euro tax Mr Prodi introduced.

Mr Prodi remains convinced that Italy was right to join the euro. But he argues that it did not adopt the most sensible economic policies immediately afterwards. In entering the single currency, Italy was forced to jettison its traditional habit of relatively high price and wage inflation, compensated for by frequent devaluations of the lira. Because it had sacrificed its exchange-rate and monetary-policy independence, it badly needed to adopt a wholly new model if it was to remain competitive inside the single currency, making supply-side reforms that would hold down its unit labour costs in comparison with those of Germany.

Instead, under Silvio Berlusconi's government from 2001 to ▸▸

Spreadeagled

It is the denominator, not the numerator, that is the real problem

ONE THING everyone knows about Italy is its huge public debt. At almost 150% of GDP, it is admittedly smaller than Japan's. Like Japan, Italy has mostly run a current-account surplus, making it less dependent than, say, Britain, on the kindness of strangers. But Japan's debt is mostly in its own currency, a chunk is owned by its central bank, and much of the rest is held by domestic savers (only 7% is foreign-owned). Many rich Italian savers also hold its debt, but some 45% of the stock is foreign-owned. And it is denominated in what is, in effect, a foreign currency: the euro. Hence the interest in *lo spread*—the difference in yields between Germany and Italy.

The natural assumption of northern Europeans is that Italy's public debt reflects a failure to raise enough taxes to finance public spending. That may have been correct when most of the debt was incurred in the 1970s and 1980s, and it may explain why Germans feared before the euro began that they might have to pick up the tab for Italian extravagance. But the fiction of Italian fiscal profligacy has not reflected the reality since 2000.

It was Germany and France, not Italy, that first breached the euro zone's stability-pact rules for budget deficits. When the financial crisis hit, Italy tipped into larger deficit. But for three decades it has usually run primary budget surpluses (ie, before interest payments). Until covid-19 blew it off course in 2020, Italy kept its public debt broadly steady as a share of GDP. Now rising inflation and interest rates may cause further problems. Although unexpected inflation reduces nominal debts, higher interest rates raise the cost of borrowing and may make primary surpluses impossible to sustain.

The price of indebtedness
Italy



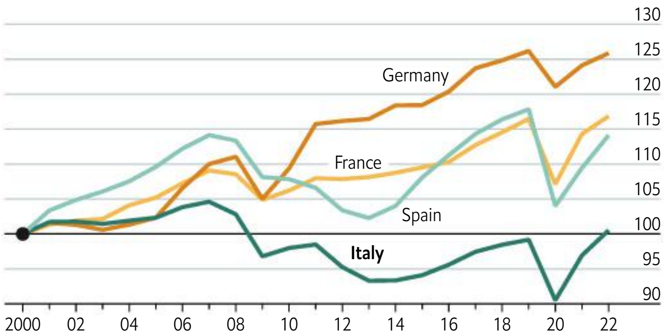
Sources: IMF; Refinitiv Datastream *To October †Forecast

Nor is it fair to accuse Italy of not collecting enough taxes to finance public spending. The tax take hovers at around 43% of GDP, less than in France but more than in Germany or Britain. Italy's GDP per head has fallen behind, and it is not clear Italians draw commensurate benefits in public services.

So why is Italy's public-debt burden still so notable? The best answer is to look not at the numerator (the debt) but the denominator (GDP). Before the euro, Belgium also had a high debt ratio. Since then it has grown faster, one reason why its ratio has fallen to just over 100% of GDP. Lorenzo Codogno, a former treasury official, has tried to model what might have happened to Italy's ratio had it matched France's (pedestrian) growth over the past 25 years: he finds it would have fallen to 60% of GDP. The best solution to Italy's debt problem is unlikely to be more fiscal austerity, but rather renewed growth.

Bottom of the class

GDP per person, $ at 2010 prices, 2000=100



Source: EIU

2006, it did precisely the opposite. Italy happily pocketed the gains from the single currency in the form of lower short- and long-term interest rates, but it then allowed labour and other costs to rise much as they had before. The result was a steady loss of competitiveness against other euro-zone countries, especially Germany, which had itself embarked on labour-market reforms to reduce its wage costs.

The consequence was further to amplify the economy's vulnerability to external shocks. China's accession to the World Trade Organisation in 2001 was one such. Enlargement of the EU to include central and east European countries three years later was another. Italy's relatively large manufacturing sector suffered disproportionately from both. And then came the financial crash of 2007-09, swiftly followed by the euro zone's sovereign-debt crisis. The two biggest recent shocks were the arrival of covid-19 in early 2020 and the Russian invasion of Ukraine and the sharp rise in energy costs this year. In every case, Italy has tended to suffer more than most of its neighbours.

Contrary to those German worries about Italian profligacy, fiscal policy was kept under relatively tight control for most of this period. As Ignazio Visco, the Bank of Italy's governor, points out, Italy ran a primary surplus (ie, before interest payments), albeit often a shrinking one, throughout the euro's first two decades. He adds that the private sector is less indebted than in almost all other European countries. These are all reasons why Italy did not have to follow Greece, Ireland, Portugal and Spain in requesting an EU bail-out. However, one irony from avoiding one, notes Silvia Merler, chief economist of Algebris, an asset manager, is that these four countries have since grown faster than Italy.

Not going for growth

Indeed, it is at least arguable that, for Italy, both monetary and fiscal policies were too tight, not too loose, for much of the euro's first two decades. This was a contributor to the economy's main weakness, which was (and is) a near-total lack of growth. As a consequence, wages and living standards have stagnated. Italians have felt the pinch, public services have been underfunded and the south has suffered especially. It is little wonder that public opinion has shifted away from its previous unthinking support for the EU project, one of the reasons for the electoral success of Ms Meloni's coalition.

That sentiment may have changed again since the EU's recovery and resilience fund was established to help countries deal with the after-effects of covid-19. Italy is the biggest beneficiary of this fund, successfully snagging a promise of as much as €192bn ($197bn) in grants and loans over the period to 2026, just over a quarter of the total available and equivalent to around 10% of annual GDP. But the money is conditional on the passage of reforms in such areas as judicial proceedings, competition policy, public administration and the tax system.

It is not clear that Ms Meloni's government will be as eager to do Brussels's bidding as its predecessor. The lure of a large pot of cash and the EU's unwillingness to soften the requirements for receiving the money will be an inducement. Moreover, a similar insistence on further reforms is a key component of the European Central Bank's new anti-fragmentation instrument that is meant to prevent sovereign-bond yields in the euro zone from diverging "excessively". It was a sharp rise in the spread of Italian over German bonds that did much to bring down Mr Berlusconi's last government in late 2011.

The economic climate is different now. The banks are better capitalised and less weighed down by non-performing loans. The euro zone's architecture is stronger, with the ECB acting as a lender of last resort and bank supervisor, even if there is no system of mutual deposit insurance. Indeed, some Italians, including a few in the new government, believe that, since their country is too big to fail and too big to bail, they should not be intimidated by the EU into excessive austerity or unpopular reform.

Yet the economic outlook has worsened. Serious inflation is back for the first time in the euro's existence, and with it has come rising interest rates. Both will bring new tests of Italy's vulnerability. The new government is likely to undergo a baptism of fire over the economy that would test even the most experienced policymakers. It will be especially hard for a prime minister as untried as Ms Meloni. And that puts new emphasis on the structural impediments to growth that continue to afflict the economy. ■

Business in Italy

Structural faults

Protected sectors need exposure to more competition

THE MACROECONOMIC outlook for Italy is cloudy. But it is micro-economic factors such as labour- and product-market regulation, protected incumbents and a broader lack of social trust that do most to discourage Italian firms from investing and foreign investors from coming in.

Italy has more small and medium-sized enterprises (SMES), mostly family-owned, than France and Germany combined. Only 30% of Italians work in companies with more than 250 staff, compared with half in France and Germany. And almost half of Italians work in micro companies with fewer than ten employees, the highest share in Europe after Greece. SMES are especially strong in manufacturing and in the north, where they are often praised as the equivalent of Germany's Mittelstand firms.

Yet there are two big differences with Germany. The first is management. Two-thirds of German Mittelstand firms employ professional managers. In Italy, the share is just one-quarter. History and culture explain some of the difference, but so may low levels of social trust. Too many family-owned firms in Italy are reluctant to employ outsiders as managers. And this may explain another difference, which is that SMES in Germany are willing to grow and sometimes to float on the stockmarket. Small Italian firms often see either course as a threat to the family's control.

The next problem in Italy is its labour market. Several minis-



In need of a spring clean

ters and officials have bravely overcome vested interests and strong trade unions to deregulate parts of the labour market (indeed, two were assassinated for their pains) over the past 25 years. But the market is still a long way from the flexibility of, say, Denmark's in its freedom to hire and fire. Getting rid of workers can be cumbersome and require proof of just cause. It is also subject to lawsuits in which judges often favour employees over employers. And the market is damagingly two-tier. As Maurizio Landini, general secretary of the CGIL, Italy's largest trade union federation, puts it: too many young Italians are on precarious temporary contracts, while their elders have more secure permanent ones.

The effects of a partly gummed-up labour market are lamentable. Even after relatively strong growth in 2021 and 2022, unemployment remains higher than in most other EU countries, at over 8%. Youth unemployment has long been substantially higher, at over 20%. The share of young people not in employment, education or training (NEETS) is 22%, the highest in the EU. And the rate of female participation in the workforce, around 54% of those aged 15-64, is the lowest.

Italy's product markets may be an even bigger structural failure. In its manufacturing sector the country has for too long displayed protectionist instincts, though these have been eroded over time. Even the giant Fiat car company, once the seventh-largest in the world, was fiercely protected in its early days. That has long gone. Stellantis, Fiat's Dutch-based holding company, is now just another global carmaker (Exor, its biggest shareholder, is also the biggest shareholder in *The Economist*).

It is above all services, the biggest contributor to any advanced country's GDP, that most need opening up to competition. Too many services firms make their living from rent-seeking and licence capture, not from their competitiveness in a free market. This can be seen in the preferential treatment of pharmacies and small retailers, beach-concession holders and taxi-drivers, or lawyers and notaries. All benefit from a network of privileged concessions that keep out competitors and are often handed down from father to son. The consequence is a services sector characterised by inefficiency and low productivity.

Protection of national champions has similarly deleterious effects. Italy is not alone in this, but it is notable that the likes of Enel (electricity), Eni (oil and gas) and Telecom Italia all exploit their political connections. Trenitalia's high-speed trains benefited from private competition in the form of Italo, set up by a group led by Luca Cordera di Montezemolo, a businessman. No government has come close to daring to shut down the national airline (Alitalia, now ITA, whose planned privatisation may yet not happen) or Italy's oldest bank, Monte dei Paschi di Siena. Instead, both have had repeated state-backed bail-outs.

Another by-product of protectionism may be Italy's low foreign direct investment. Foreign investors are wary of a country that tends to look after its own against outsiders. Italy also scores badly in rankings of places good to do business. In 2020 it came 58th in the World Bank's rankings, below Serbia and even Belarus. For dealing with construction permits, it came 97th; for starting a business 98th. Startup costs are among the highest in the EU; fees to notaries alone can be 75% of the bill. Electricity is more expensive and takes longer to connect than in most other EU countries.

Italy scores badly in rankings of places good to do business

Then there is the low quality and inefficiency of public administration. Long delays in receiving permits are common. Italy has too many levels of government, one reason its tax burden is high. Another is that, judging from the large gap between what should be and actually is collected in VAT, tax evasion is more extensive in Italy

than in most other EU countries. This is not helped by a habit of offering amnesties, which also happens for illegal building. In both cases amnesties only encourage repetition of the offence.

Worst of all, Italy does badly on education. Its PISA scores from the OECD for mathematics, science and reading are all below average. Although the country has some good private universities, it has no university in the world's top 100. In 2019 the share of 25- to 34-year-olds who had completed tertiary education was the lowest in the OECD apart from Mexico.

The low priority given to education over pensions is striking. Francesco Grillo of the Vision think-tank in Rome calculates that spending on pensions as a share of GDP in Italy, at around 15%, is five times as much as spending on education, the highest such ratio in Europe. This is evidence of a country that favours the old over the young so much that it can seem like a gerontocracy.

Looking for the light

There are bright spots, even so. In regions like Lombardy, Piedmont and Veneto, Italy has many world-class companies, especially in food and fashion. "Made in Italy" is a valuable brand. The mayor of Milan, Giuseppe Sala, declares that his city is "booming" as never before. Luxottica, based in the city, is the world's biggest maker of spectacles. In Veneto, Geox is one of its most successful shoemakers. Outside Brescia, Beretta is one of the world's leading firearms manufacturers, almost 500 years after its foundation. Mr di Montezemolo says that, if they can avoid interaction with public administration and focus on exports, Italian firms can be highly successful. But that is a big "if".

In Turin CNH and Iveco, spin-offs from the old Fiat, are big exporters. CNH makes tractors and industrial engines, including an ingenious grape-picking machine (not coincidentally, Italy is the world's biggest wine producer). Iveco's trucks and buses can be found worldwide. In Emilia-Romagna, Modena has become a global car-research centre, with a motor-vehicle university, helped by the fact that Ferrari, Lamborghini and Maserati all hail from the region. Yet another example is Moncler, a fashionable puffer-jacket maker based in Milan that has expanded into America by buying a rival, Stone Island. The two biggest banks, Unicredit and Intesa Sanpaolo, are also stronger and more pan-European than they were a decade ago.

Energy may be another unsung success story. Italy has few energy sources of its own. Like Germany, it was for too long highly dependent on Russian gas. But since the Russian invasion of Ukraine, it has moved faster than Germany to reduce that dependence. It has also done better than most other EU countries in reducing carbon emissions, though not without pushback. Any suggestion of a new role for nuclear energy is strongly resisted. And earlier this year fierce local opposition, led by the mayor, held up a new floating liquefied-natural-gas platform in the port of Piombino in Tuscany.

Even public administration has improved. In the Draghi administration Marta Cartabia, a former judge, made several reforms to speed up Italy's notoriously sluggish judicial system. It is not yet clear if her successor, Carlo Nordio, will be able to complete the job, as signs of delay in implementing these reforms have caused some concern. Vittorio Colao, the former technology minister, drove a programme of rapid digitisation of public services. His real ambition, he says, was to abolish cash, but the new government seems more inclined to raise the limit on cash transactions. The former infrastructure and transport minister, Enrico Giovannini, also improved Italy's public infrastructure, from ports to railways. Perhaps Mr Salvini can keep up the momentum.

In all such cases, from justice to infrastructure, the worst part of the country is still the south: Italy's notorious *mezzogiorno*, which continues to drag down the whole country. ■

The south

Sunrise or sunset?

Southern Italy needs private enterprise and infrastructure, not more public money

MOST EUROPEAN countries have regional problems. Sometimes this translates into full-blown independence movements (Britain and Spain spring to mind). But more often the issues are inequality, high unemployment and lack of development. Italy no longer has a serious independence movement, and it has devolved significant powers to city mayors and regional presidents. But in its south it has one of Europe's most troubled regions: the *mezzogiorno*.

Two things are striking about the *mezzogiorno*. The first is its size: over a third of Italy's landmass, a little under a third of its population and about a quarter of Italian GDP. The second is that, unlike most other poor European regions, it is no longer catching up with the rest of the country, as in the period immediately after the war. Instead, it has been falling further behind. It is more like the north of England than, say, the former East Germany.

The big question is why? Some cite history and culture. The semi-feudal kingdom of Naples with its absentee landlords was not conducive to fostering social trust, whereas northern Italy with its thriving city-states was the opposite. Others look at Italian unification in the 1860s, pressed by northerners but resisted by southern elites. Even today it is easy to find people who accuse Garibaldi not of unifying Italy but of dividing Africa. Yet Adriano Giannola, president of SVIMEZ, a development think-tank, says that the *mezzogiorno* caught up to almost 70% of average GDP between 1950 and the 1970s, only to fall back to 50%.

Cultural differences doubtless persist. Yet today it is surely economic and social differences that matter more. Infrastructure such as roads, ports, rail and air links is generally worse and less



Lots of tourists in the sea

extensive in the south. Educational standards are lower. And organised crime in the form of Sicily's Mafia, Campania's Camorra, Puglia's Sacra Corona Unita and, most oppressive, Calabria's 'Ndrangheta, casts a dark cloud over all aspects of life. The results are apparent in less investment, fewer jobs, lower levels of participation in work and a greater reliance on the public sector.

Over the years, the people of the *mezzogiorno* have tried different approaches. In the 1950s and 1960s the answer was emigration, of farmworkers to the north but also of the young to America, Britain and West Germany. Yet this translated into a brain drain that left behind the old and less well-educated. Another plan was subsidised investment through state-owned funds, often in manufacturing plants. Yet these were later disparaged as "cathedrals in the desert". Even so, Mr Giannola argues that the abandonment of industrial policy and the habit of the north to look to Germany not its southern hinterland have been unhelpful.

As in the rest of a country that is already lagging behind in productivity growth, wages tend to be low in the south. But this is not always true in the public sector. The *mezzogiorno*'s failure to converge with the north suggests that differential public-sector pay could help create more jobs. In contrast the citizens' income (a welfare benefit), championed by Giuseppe Conte's Five Star Movement, may be unhelpful. Too many people proved keen to take the benefit but not to work legally, instead supplementing their income in the black economy. The government is now proposing to cut the benefit sharply.

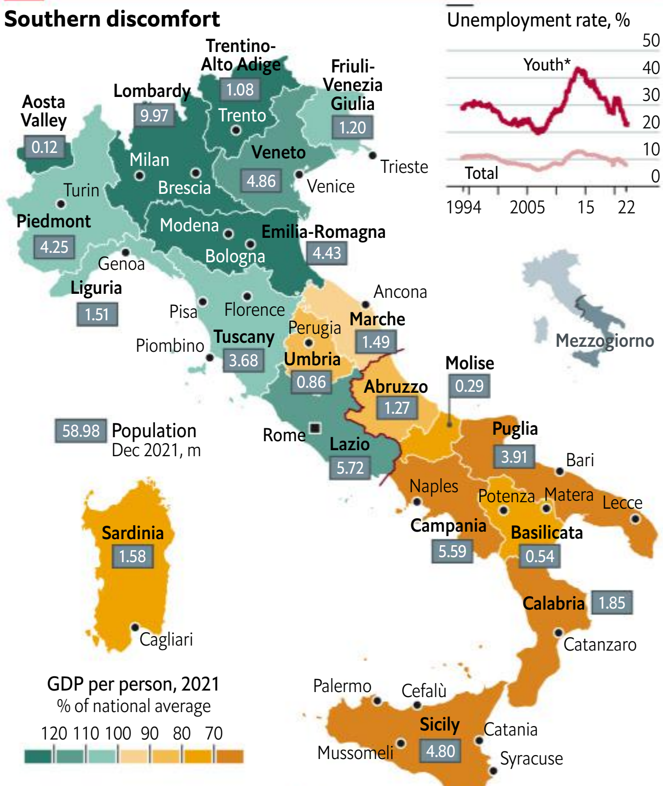
South working

Even in the *mezzogiorno*, not all is gloom. Puglia has been a recent success story, with both tourists and businesses lured to Bari and Lecce. The mayor of Naples, Gaetano Manfredi, says his city has hugely improved, the climate is buzzing and the quality of life for incomers is high—even if there is still too much rubbish in the streets. Apple launched its first European "developer academy" in Naples in 2016, and it has since expanded. The film industry has taken off, many small textile and engineering firms have sprouted around the region and there are thousands of students. Tourism has bounced back from covid-19. Neither the mayor nor the regional president, Vincenzo De Luca, expect much help from the Meloni government, however.

In the Sicilian capital, Palermo, too, tourism is booming, restaurants are full and student life is busy. The mayor, Roberto Lagalla, who is a member of the FdI, hopes for more from the new government. He is not an admirer of the citizens' income. But like many southerners, he is enthusiastic about the prospect of a new bridge to link Sicily to the mainland and optimistic that Mr Salvini will make it a priority. Sceptics see it as just another southern boondoggle that would benefit few beyond organised crime.

Leoluca Orlando, a former mayor of Palermo, says the Mafia has lost much of its grip on Sicily since he and some brave magistrates fought it in the 1990s. Yet other organised-crime groups in the south remain powerful. And anti-Mafia prosecutors in Naples and Rome note that, although old-style extortion and murders may now be less common, organised crime has moved on to broader business corruption, often on an international scale.

Elsewhere in Sicily, Catania has several high-tech firms built around what is known as Etna Valley, including STMicroelectronics, a chipmaker. Like other southern regions, the island hopes that working from home post-covid, or "south working", will bring back departed people. The switch in the region from being a place of continuous net emigration into the reverse is yet another striking change (see box on next page). But the Meloni government is strongly anti-immigration from abroad, especially irregular immigration from Africa; it has even turned away from Italian ports rescue ships that pick up migrants in the Mediterranean.



Sources: Istat; Eurostat

*15- to 24-year-olds

One more big change is the expansion of tourism. Yet here Italy, which has fallen from the top two to fifth as a global tourist destination over the past 50 years, could do better. The newish mayor of Rome, Roberto Gualtieri, says tourism arrivals to the eternal city have hit new records, and hotels are full. Yet too many hotels and restaurants in the capital have failed to reopen after the covid-19 shock. And the challenge of running one of Europe's least governable cities remains huge.

The south also does not do as well as it could in tourism. Too many arrivals at Naples airport head straight for the Amalfi coast and the island of Capri. Yet 200 years ago Naples was one of Europe's most appealing destinations. Besides its beautiful bay around Mount Vesuvius, it boasts two of Italy's finest museums, the archaeological museum and the Capodimonte. On a recent visit by this writer, both were mostly empty (except for the salacious cabinet of erotic mosaics from Pompeii). Across the Mediterranean, Barcelona, with fewer historic assets, attracts twice as many tourists as Naples every year.

A similar story can be told of Sicily. The island ought to be the jewel of the Mediterranean, with Greek temples, medieval cathedrals and such historic cities as Palermo, Cefalù and Syracuse, as well as some of Italy's best food, wine and beaches. Yet Spain's Balearic Islands draw more visitors than the whole of the *mezzogiorno*, including Sicily, every year. The comparison with Spain is instructive. The Meloni government, like many predecessors, needs a better southern strategy. But politics may get in the way, for the south is not that keen on the right-wing coalition. ■

The *mezzogiorno* is no longer catching up with the rest of Italy

Politics

Italy's bane

Political instability has repeatedly hamstrung reform efforts

In few countries can there be as much disdain for the political class as in Italy, not least because of the system's high cost. It is not just that the country has too many levels of government, though it does. It is also the excessive pay and perks attached to elected office. The bestselling book "La Casta", published in 2007, found that members of the Italian parliament were paid more than their equivalents in almost all other EU countries. It also revealed that the public sector had access to a fleet of 72,000 cars. Such public largesse continues today.

Yet the excessive cost of parliament, at least, has been trimmed by one good thing about September's election, which was to implement a reduction in the number of elected deputies and senators in parliament from 945 to 600. Another good thing was that, unlike the 2018 election, this one produced a clear result, handing a majority to the right-wing coalition led by Giorgia Meloni. She is the first prime minister to win the job as a direct result of the vote since Silvio Berlusconi managed the feat in 2008.

The worst feature of the election was its turnout. At just under 64%, it was the lowest for any Italian general election since 1946. This supports the conclusion that there is a broad dissatisfaction among voters with the entire political class. Too often elections have led to protracted negotiations about forming a new government that may bear little relationship to the results. And voters are also fed up with the political instability that has become irrevocably associated with Italy.

Romano Prodi, prime minister from 1996 to 1998 and again from 2006 to 2008, links Italy's instability to its repeated failure to pursue and implement big reforms. Soon after he first got the job, he went to Germany to meet Helmut Kohl, then the EU's elder statesman. At the end of their discussion, which was mainly about the European single currency, Kohl simply asked who would be the Italian leader at the next meeting.

Instability is not just a product of bouts of horse-trading and coalition in-fighting. It also reflects repeated efforts by voters to search for political leaders who might actually do something about Italy's chronic slow growth. Simplifying somewhat, ever since the collapse in the early 1990s of the old system under the first republic that had entrenched the Christian Democratic party in government since 1946, the electorate has been trying out a series of different answers—so far without much success. ▸▸

The houses that Giuseppe sold

Innovative ways to cope with demographic decline

In relation to demography, as well as public debt, Italy is often compared to Japan. It has Europe's second-lowest birth rate, at 1.2 babies per woman. Its population has been shrinking since 2015. Pension reform was pushed by the Monti government in 2011-13 but has been partly reversed, leaving Italy spending the highest share of GDP on pensions in the OECD. Child-care costs are high. Politicians duly fret. Giorgia Meloni's decision to appoint as family minister a conservative Catholic, Eugenia Maria Roccella, and add "birth rate" to her ministry's title, is telling.

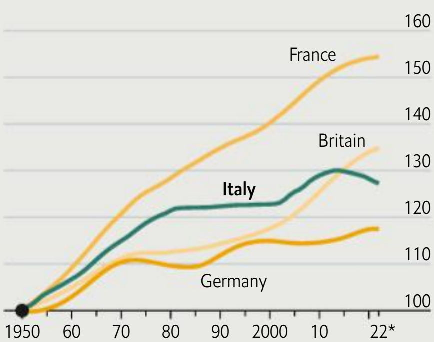
By history and tradition, Italy is a country of emigration, not immigration, but that too has changed. Alfonso Giordano, a demography specialist affiliated to LUISS University, says Italy is bad at integrating immigrants. It sticks to the *jus sanguinis* ("right of blood") principle, so even immigrants' children born in Italy can be denied citizenship. Mr Giordano suggests better co-ordinated EU action on irregular migrants from Africa could dampen resistance to regular immigration. Most economists see more immigration as essential.

Another effect of demographic decline is depopulation of many towns and villages, especially in the *mezzogiorno*. A good example is Mussomeli, in central Sicily. Its medieval historic centre, nestled beside a ruined 14th-century castle, is picture-perfect, with narrow cobbled streets, historic crests to differentiate the districts, several churches and piazzas, and stunning views. Yet as the mayor, Giuseppe Catania, tells it, five years ago almost nobody lived there. The local population had either left or moved into newer, more convenient housing on the edge of town.

So, along with several others, the mayor signed up to a new initiative:

Shrinking...

Population estimates, 1950=100



Source: UN Population Division *Forecast

case1euro.it, which has spread to much of Italy. Under the scheme, his office contacts owners of old empty houses, who are still subject to hefty property taxes, and offers to cancel what is owed in exchange for the title deeds. The properties are then sold to new investors for a notional one euro. Mr Catania says that, since 2017, some 330 homes in the historic centre have been sold to new owners.

There is, of course, a catch. Although not obliged to live in the property, or even to hang on to it, the new owners must renovate their homes within three years. For a typical old house with a floor area of some 50-80 square metres, the cost of renovation is around €500-900 per square metre. Covid-19 has meant delays, but Mussomeli now boasts 120 building firms ready to do the work. The big benefits for the town are a clean and spruced-up historic centre that is starting to attract tourists (though there is as yet no hotel); and an influx of new people, many able to work from home with a good internet connection. Mr Catania lists no fewer than 18 nationalities among his buyers. The only one missing? Italians, who no longer see much appeal in living in the cramped conditions of their forefathers.

Mr Berlusconi was one early possible solution. The hope was that Italy's richest man might protect all Italians and make them richer. Yet far from doing so, his terms in office mostly revolved around exploiting conflicts of interest to protect himself and his business empire. Voters then turned to the promise first held out by Mr Prodi of solving their troubles by signing up to the euro. When the financial crash hit and then spawned the euro crisis, a third answer presented itself: rule by a technocratic prime minister, Mario Monti, who steered Italy between 2011 and 2013.

Next came a batch of promising reformers from the Democratic Party (PD), with first Enrico Letta and then the hyperactive Matteo Renzi as prime minister. Mr Renzi had big plans to reform almost everything in Italy, but he was forced to quit in 2016 after losing a referendum on constitutional changes. This period ended in 2018 when Italy's desperate voters turned to the disruptive Five Star Movement co-founded by Beppe Grillo, a comedian, and to Matteo Salvini's League.

Brothers and sisters

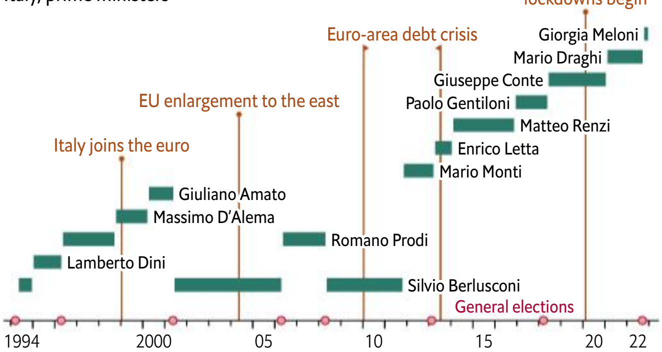
The bizarre, and often unstable, coalition between these two populist parties, formed under the leadership of Giuseppe Conte, was never likely to do enough to revive the economy. Predictably enough, in-fighting within the coalition ended the government early, forcing Mr Conte to form a link with the PD instead. Then Italy was badly hit by covid-19 in early 2020. And Mr Conte's government was replaced in early 2021 by yet another technocrat, Mario Draghi, who led a broad-based team until last summer, when Mr Salvini and Mr Berlusconi contrived to bring down the government, leading to the election that brought in yet another choice: Ms Meloni's FdI.

The victory that brought in Italy's first female prime minister did not reflect a big swing to the right, but rather three other changes. The first was the collapse of the Five Star Movement from a 33% vote share in 2018 to 15% (even this was better than expected, mainly thanks to a strong showing in the south). Second was a redistribution of votes within the right, from Mr Berlusconi's Forza Italia and Mr Salvini's League to Ms Meloni's FdI. Third was the failure of the PD under Mr Letta to form a working alternative coalition, with either Mr Conte's Five Star Movement or the centrist parties of Carlo Calenda and Mr Renzi. This failure tipped most of Italy's first-past-the-post seats (a quarter of the total) to the right.

Ms Meloni now has clear majorities in both houses. Yet this does not guarantee that her government will endure. Neither Mr Berlusconi nor Mr Salvini seems comfortable with her leadership. That may reflect her youth, her inexperience or simply the fact that she is female. Mr Salvini, in particular, has plenty of form in

Room at the top

Italy, prime ministers



Source: *The Economist*



Much to protest about

bringing down governments. Yet history also suggests that the right is more successful at keeping governments going than the left, which too often devotes more time to in-fighting than to confronting its opponents.

The PD is certainly in disarray. Daniele Albertazzi, an academic at Surrey University, blames it for not forming a coalition with the Five Star Movement, which inevitably led to the right's victory. Mr Letta retorts that, had he tried to do a deal with Mr Conte, both parties would have lost votes. He says he was also let down by Mr Calenda and Mr Renzi. Mr Calenda optimistically predicts that the Meloni government may not last a year. Mr Renzi suggests the European elections in 2024 could be a crunch test.

However enduring Ms Meloni's government proves, what will she do? Initial fears over her foreign policy seem to have faded. Although both her coalition allies have a murky history of friendship with and admiration for Russia's Vladimir Putin, Ms Meloni is emphatically not a fan. She is a firm Atlanticist and a supporter of NATO. She is unlikely significantly to change Italy's policy of full support for Ukraine and continuing to wean itself off its dependence on Russian gas.

There may be more reason to worry about her attitude to the EU. She is unashamedly nationalist and, like Mr Salvini, has flirted with the idea of leaving the euro. Her party is a member of the European Conservatives and Reformists (ECR) group, which once included the British Tories (indeed, she is its president). She has often expressed support for the illiberal anti-EU Hungarian prime minister, Viktor Orban. She is hostile to immigration. She has been a trenchant critic of the Brussels bureaucracy. And she has begun her premiership with spats with both France and Germany.

Yet overall Ms Meloni, partly under the influence of Mr Draghi, has softened her tone. She knows how vital for Italy is the EU's €725bn resilience and recovery fund. Her Europe minister, Raffaele Fitto, is seen as a pro-European. He says the party's ECR membership shows it to be quite unlike populist far-right anti-EU parties in the rest of Europe. Mr Fitto is in charge of implementing the EU's recovery fund, so he understands the need for good relations with Brussels. Ms Meloni's first foreign trip after becoming prime minister was to the EU institutions.

The bigger question for the government concerns its view of liberalising reform. Here there are plenty of doubts. Broad goals of more privatisation and a reduced tax burden seem sensible enough. But when it comes to detail, the plans do not always add up. Privatisation no longer seems a first priority, especially if it means opening up to foreign investors; indeed, nationalisation of some utilities looks more likely. The notion that Italy would benefit from a flat tax is unconvincing. Although raising borrowing may be reasonable given the prospect of recession next year, the government knows it cannot emulate the example of Britain's Liz Truss by ignoring financial markets.

Adolfo Urso, the industry minister, talks up the desirability of an EU-wide industrial policy to revive manufacturing. Although he welcomes foreign investment, he cautions against predatory acquisitions. Yet state intervention in Italy does not have a great history. And it glosses over the bigger question: does the government have the will to tackle vested interests that always obstruct reforms? Ms Meloni has a poor record when it comes to backing pro-competitive liberalisation. She is no fan of foreign investment and is instinctively protective of Italian national assets.

Her inexperience may or may not be a problem. Like any Italian politician, she must always be mindful of Machiavelli's infallible rule: that unless a prince is himself wise, he cannot be well advised, for this is only possible if he finds one good adviser, and any such adviser soon takes over the state. But she certainly seems unlikely to be Italy's Margaret Thatcher. More's the pity. ■

The future

A new reform spirit

Other countries have managed to reform. Italy must not give up

PAUL GINSBORG, a leading British historian of post-war Italy who died earlier this year, once wrote that, "If there is a single, recurrent, almost obsessive theme in the political history of postwar Italy, it is that of the need for reform and of the failure to achieve it." Now, more than ever, the country needs huge reforms to return to a path of growth.

There are two common Italian responses to such an assertion. The first is denial. The economy seems to be doing better than it was a decade ago. Compared with other countries in Europe, Italy has plenty of well-off people. So long as you are in a protected job and can afford a property, life in such a wonderful country is comfortable enough. Is it really worth upturning the entire social order only to try to generate slightly higher growth?

The second is resignation. Italians have become used to being told that their country is the new sick man of Europe (though besides the Ottoman empire, the original sick man, Britain, France and Germany have all been garlanded with this title at different times). But they have learned from experience that structural reforms are hard to push through in a country that more or less invented medieval guilds—and that, as with pensions, they can all too easily be rolled back. If change is impossible to stick to, why waste time pressing for it?

Yet both responses are wrong. No doubt Italy and Italians will survive whatever happens. But without substantial root-and-branch reform, their standard of living is likely to fall ever further behind the rest of Europe. Being overtaken not just by western Europe but , in due course, by parts of eastern Europe should wake up even the most complacent. And what should clinch the argument is that radical structural change is clearly possible, with the right leadership. Italy needs only to look at other European countries over the past four decades to understand this.

One example was Britain in the 1980s. By the 1970s the common view was that Britain was permanently saddled with a slow-growing, strike-prone, uncompetitive economy. Indeed, it was a key reason for joining the then European Economic Community in 1973. But after 1979 Margaret Thatcher shook up a moribund economy with structural reforms that helped to make it more competitive. And Britain, for all its other self-inflicted problems, has since mostly outgrown Italy, at least until Brexit.

Going Dutch

The next case is the Netherlands, which was the victim of what became known as the Dutch disease in the late 1970s after money poured into the exploitation of gas reserves. After the Wassenaar agreement struck between trade unions and employers in 1982, the Dutch labour market was transformed, helping generate a huge growth in part-time work. Later in that decade, both Finland and Sweden, for different reasons, found themselves stuck in a deep economic hole. Determined action by the governments of both countries helped dig them out again.

An even more telling example was Ireland after 1988, when it was labelled the poorest of the rich. Tax cuts and labour reforms then helped set off what became known as the Irish miracle. A notable feature of this miracle was a huge increase in the rate of female participation in the workforce, a big shock in a country with such a fervent Catholic population.

In the early 2000s the baton of reform passed to Germany. The Schröder government, although often derided nowadays, loosened regulation of the labour market and shook up the welfare system through its Agenda 2010 reforms. As in Ireland, an important result was a marked increase in the share of women participating in the workforce. Germany was at one time not much better than Italy on this measure. Now, unlike Italy, its female participation rate is well above the OECD average.

The entry of central and eastern European countries into the EU has produced several more instances of successful structural reforms. A notable case was the three Baltic countries after 2007. Latvia in particular made wrenching changes to both public and private sectors. And then came the four main countries that were bailed out by the EU during the euro's long drawn-out sovereign-debt crisis: Greece, Ireland, Portugal and Spain, all of which have since done better than Italy. Indeed, almost the only big European countries that have not made sufficiently large structural reforms are now France and Italy.

Many Italians, especially those happy with their lives and insulated from competition, may still find it preferable not to be disturbed. Like lots of insiders, they might share the response attributed to Lord Salisbury in the 19th century when reform was proposed: "Change?…Aren't things bad enough as they are?" But for the sake of their country, they would do better to subscribe to the famous doctrine of Giuseppe di Lampedusa in "The Leopard": "If we want things to stay as they are, things will have to change." It is not too late to unleash Italy's potential. ■

ACKNOWLEDGMENTS A list of acknowledgments and sources is included in the online version of this special report

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The Gulf and China

Arabs looking east

RIYADH

Xi Jinping's visit to Riyadh highlights China's growing clout in the Gulf

THE MOOD on the Arabian peninsula was jittery. After an abrupt surge, oil prices were sliding amid a rich-country recession. Conflict brewing in the Persian Gulf left Saudi Arabia worried about attacks on its oilfields and eager to procure ballistic missiles to deter its rivals. Rebuffed by America, a young and powerful Saudi prince turned instead to China, which signed a secret deal to supply the kingdom with the weapons it wanted.

If this story evokes a sense of déjà vu, it most certainly should. It happened four decades ago and led to the establishment of Sino-Saudi relations in 1990. Much of it has echoes today, as Xi Jinping arrived for a visit to Saudi Arabia on December 7th, his second trip to the kingdom.

Not everything is the same, of course. In contrast to the 1980s, Saudi Arabia and its Gulf neighbours now have strong commercial ties with China. Still, *plus ça change*: the Saudis continue to treat China as a foil for America, which in their eyes has become a particularly unreliable partner over the past decade.

The challenge for Gulf states is how to balance these two views of China. The first has become increasingly alluring. China is a big export market and a major source of investment in the Gulf. The second, in which China serves as a strategic hedge against an erratic America, is less compelling: China is no easy substitute. Moreover, in trying to play one power off against the other, Gulf leaders may hasten America's abandonment of them, which they fear.

Start with the Gulf's economic relationship with China, which is growing. Energy remains at the core. Last year 51% of China's oil imports came from Arab states, and four-fifths of that came from the monarchies of the six-member Gulf Co-operation Council (GCC). In November Sinopec, a state-run energy giant, signed a 27-year agreement to buy liquefied natural gas from Qatar, the longest such gas deal ever.

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Since 2005 China has signed large investment deals and construction contracts with Arab states worth $223bn, says the American Enterprise Institute, a think-tank in Washington. Of that total, 52% has been with the GCC countries (Algeria, Egypt and Iraq took much of the rest). The pace of those deals speeded up in the late 2010s (see chart on next page). Though it has since slowed, due to the pandemic and a slump in Chinese investment worldwide, China continues to see the Gulf as promising. In the first half of 2022 Saudi Arabia received $5.5bn in investment and contracts through China's Belt and Road Initiative, more than any other country.

Much of this investment remains focused on energy. Trade is oily too: Chinese imports from the region are almost entirely petrochemicals and other commodities. Gulf states are keen to shift their economies away from oil and view China as a key partner in that effort. Last year it pumped money into hotels in Oman and auto-manufacturing in Saudi Arabia. Such projects are still outliers, though; non-oil investment remains sluggish.

None of this causes much angst in America. It is the Gulf's growing ties with China in strategic sectors that worry people in Washington: telecoms, security and, increasingly, defence. GCC members are keen customers of Huawei, the telecoms giant that is under American sanctions, and are happy to do business with compa- ▸▸

nies like SenseTime, an artificial-intelligence firm blacklisted by America for its role in spying on Uyghurs in Xinjiang. In September a company owned by Saudi Arabia's sovereign-wealth fund announced a $207m joint venture with SenseTime to build an AI lab in the kingdom.

China has also sold armed drones to the UAE, among others, which has used them on battlefields across the region. In March a Saudi firm signed a deal with a state-owned Chinese defence giant to manufacture drones in the kingdom. America's spies say China is helping Saudi Arabia build ballistic missiles as well.

Last month at the Manama Dialogue, an annual security powwow in Bahrain, American officials came with warnings. Brett McGurk, the president's Middle East adviser, said growing co-operation with China in the region would put a "ceiling" on relations with America. Another official acknowledged the tensions in the relationship, particularly over Iran.

Mr Xi is being more warmly received than Joe Biden, whose trip to Saudi Arabia in July, his first as president, had an air of desperation: oil prices were high, an election loomed, and he needed help. The Saudis sent him home empty-handed. After more than a year of froideur from his people, they were in no mood to be generous.

Mr Xi, by contrast, will probably go home with a stack of big investment deals and other announcements. He was due to meet the Saudi leadership, including Muhammad bin Salman, the crown prince and de facto ruler, on December 8th. Next on his schedule is a summit with Gulf leaders and a further meeting with figures from across the Arab world. Saudis joke about the prospect of the taciturn Mr Xi joining a traditional sword dance.

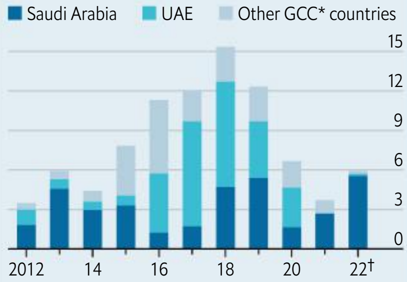
Saudi officials insist that none of this is meant as a snub to America: China is an important country, they say, and the kingdom treats it as such. Still, the Biden team has had a tricky relationship with Saudi Arabia and sees China as its main competitor. The chummy reception for Mr Xi—in contrast to the frosty one for Mr Biden—will not go down well in Washington.

In private, Gulf officials say they are exasperated with an America whose policy seems incoherent. Three consecutive presidents have talked of reducing America's role in the Middle East, yet they do not want other powers to gain too much influence as they depart. Such frustrations in the Gulf are understandable.

But so too are America's. The GCC complains that America has not done enough to protect it from the Gulf Arabs' arch-rival Iran, with which China signed a 25-year "strategic partnership" last year. Mr Xi is one of the few leaders with real leverage over Iran. Most of the oil exported from Iranian ports, in defiance of American sanctions, finds its way to Chinese refineries. Yet he is loth to use it to bring pressure on Iran's government.

Building up again

Investment and construction contracts with China, $bn



Source: American Enterprise Institute

*Gulf Co-operation Council †January-June

Buoyed by higher oil prices and growing economies, Gulf rulers feel assertive: they think this is their moment to step out from America's shadow. Mr Biden will have to accept a greater Chinese role in the region. But both sides should recognise that, now as in the 1980s, China cannot fully replace America in the Gulf. ■

Iran

Off with those scarves!

The ayatollahs hope to stay in power by curbing the hated hijab-enforcers

Unnerved by nearly three months of spreading protests, Iran's theocratic regime seems to be dithering. In their first big concession since demonstrations erupted in September after the death of Mahsa Amini for not wearing a "proper" hijab, the clerics hinted that they are disbanding the morality police force in whose custody she died. It had been "shut down", said the prosecutor-general, Muhammad Jaafar Montazeri, adding that unspecified "cultural" methods would be adopted instead. Come mid-December, he promised, a decision would be taken on whether to abolish the mandatory hijab altogether.

It has already been thrown off in the streets. The morality police's "guidance patrol", which combed public places to capture young women and haul them off for re-education, disappeared at the start of the unrest, once protesters began torching their vans. Millions of women have discarded their veils, sometimes burning them. Celebrities previously paid to sing the regime's praises have followed the example of rebellious schoolgirls by appearing bareheaded. For weeks unveiled women have stridden past the security forces' scathing eyes. "It's a different country," says a teacher, who marvelled at bareheaded women boarding flights and passing through passport controls.

Now the protesters want to change or overturn Iran's institutions and rewrite the statute books. For 43 years, keeping women veiled has been a defining symbol of the republic, epitomising its strict enforcement of sharia (Islamic law). Ruhollah Khomeini, the Islamic Republic's founder, called it the "flag of the revolution". "It's the regime's Berlin Wall," says a well-connected cleric. Knocking it down, he reckons, would "signal the theocracy's collapse".

The government's men want to uphold the old code. Security guards enforce "proper" dress in government offices and in courts, where clerics are still sentencing scores of protesters to death. Officials threaten to shut down banks and shops that serve unveiled women. Regime voices insist that the prosecutor-general has been misunderstood. And the supreme leader, Ayatollah Ali Khamenei, says that "each rioter, each terrorist", as he terms his opponents, must be punished. Since the protests began, rights groups say that some 470 people have been killed and at least 18,000 detained (see Graphic Detail).

But the ruling clerics, sensing that the repression has failed to crush the unrest, are divided over what to do next. The usually hardline president, Ebrahim Raisi, speaking on December 7th at a university in Tehran, the capital, accepted "fair criticism" of his administration. Yet his bully boys beat up students demonstrating outside. Some security people favour replacing the morality police with smart cameras that would link unveiled women to their mobile phones and send them text messages imposing fines.

But leaked transcripts of official meetings call for a lighter touch. A mouthpiece for the Islamic Revolutionary Guard Corps, the regime's praetorian guard, has suggested bringing back Muhammad Khatami, a former president censored for his reformist views, to bridge the gap between the rulers and the protesters.

Even the most reactionary clerics, the theocracy's backbone, may be wavering. Most want to keep the veil and gender segregation but question their reimposition by force. "Khamenei is becoming a minority even among conservatives," says one. From his seat in neighbouring Iraq, Shia Islam's top cleric, Grand Ayatollah Ali al-Sistani, has criticised senior Iranian clerics for damning the protesters.

But it may be too late for concessions to work, anyway. Trust in the ruling clerics' word has sunk. Many saw the prosecutor-general's remarks as a ruse to divide the protesters. Others thought it was simply a response to the weather. The morality ▸▸

Perverse incentives

To reap, perchance, per diem

BAGAMOYO

Ay, there's the rub: daily allowances are a big problem in Africa

WITH JOINTS such as Funky Squids Beach Resort, Bagamoyo sounds like a party town. It is not. Hotels depend on bureaucrats from Dar es Salaam, Tanzania's commercial capital, 50km to the south. "Bagamoyo is per-diem town," explains the head of an NGO, in reference to "by the day" allowances claimed by civil servants for attending out-of-town events. "No meetings ever take place in government ministries," he sighs.

"Perdiemitis" is rife in Tanzania and many other countries in the region. In May the government announced that per diems for senior civil servants would more than double, from 120,000 shillings (about $50) to 250,000. The last detailed study, albeit from 2008-09, found that spending on allowances ($390m) was enough to pay the salaries of more than 100,000 teachers.

Per diems began as justifiable payments for extra expenses. But in the 1980s and 1990s they became a way of furtively padding pay packets while governments trimmed official wages as part of structural-adjustment programmes. They have since been taken for granted. Research by Guy Blaise Nkamleu and Bernadette Dia Kamgnia for the African Development Bank notes that it is "not uncommon" for officials' allowances "to equal or exceed" base salaries.

Such largesse encourages abuse. Earlier this year the boss of Uganda's national airline was accused of claiming $12,750 for foreign trips she never made (the airline says that in some cases she did travel and in others she paid back the allowances). Gambians are angry at how the wife of the sports minister received per diems for the recent Commonwealth Games, despite not attending the event (the minister denies any wrongdoing and says the money will be repaid). In many countries there is widespread "leap-frogging", where officials claim attendance at contemporaneous events, often with colleagues signing on their behalf.

Even legitimate per diems undermine good government. Attendance at away days is determined by allowances, not the value of the event. Senior staff attend training meant for junior employees. Donors splurge on per diems (often paid in hard currency) so that officials bless their pet projects. They also create powerful lobbies. Cash-strapped Malawi halted government meetings on the shores of Lake Malawi in June. By November it had relented.

The hoteliers of Bagamoyo faced no such hardship, however temporary. Managers say that business has boomed since Tanzania increased allowances. Funky or not, they—and local bureaucrats—are squids in.



Hardship pay

police normally lower their profile in Iran's cold winters, when women cover up. Some thought the government would just give the morality police a new name.

And many Iranians want more than just an end to the Islamic dress code. "With or without the hijab, onwards the revolution," cried students at a polytechnic in Tehran on December 7th. Many Iranians, feeling emboldened, see the reformist clergy as a spent force and want the ayatollahs, whatever their stripe, to surrender power.

The call for a three-day general strike that began on December 5th was more widely observed than earlier ones. Many shops, including in the bellwether bazaars, lowered their shutters in Tehran. Officials warned that premises joining the strike would be closed down for good, but the protesters' threats to boycott those that stayed open made a bigger impact.

Still, Iran's pendulum has a habit of swinging wildly. In the 1930s the last shah's secularising father banned the veil and ordered his police to rip it off women's heads. Today's protesters yearn for a day when, in matters of dress and much more besides, Iranians can choose for themselves. ■

South African politics

Sofa so good

JOHANNESBURG

The embattled president soldiers on

CYRIL RAMAPHOSA is an enigma; his presidency, a disappointment. But if there is one thing he has consistently spoken out about, it is the importance of the rule of law, especially the constitution he helped draft as Nelson Mandela's right-hand man. His biggest success as South Africa's president has been rebuilding some of the criminal-justice institutions destroyed by his predecessor, Jacob Zuma.

On November 30th the rule of law became personal. A panel of ex-judges appointed by Parliament concluded there was enough evidence of misconduct by the president in relation to an odd saga involving cash inside a sofa for MPs to consider impeaching him. Over the next 24 hours he pondered resigning, in part because he felt not doing so would be hypocritical.

Yet bolstered by cabinet allies and provincial bigwigs within the African National Congress (ANC), Mr Ramaphosa chose to fight and stand for re-election as leader of the ruling party at its national conference, which starts on December 16th. Mr Ramaphosa also asked South Africa's highest court to disqualify the panel's findings on the ground of insufficient evidence. MPs may choose to wait for that ruling before their debate on the panel's report, scheduled for December 13th. Since a majority of MPs must vote to impeach a president, and the ANC has 57.5% of the seats, it would require a chunk of his party to turn on him.

In another twist Mr Ramaphosa's fantastical-sounding version of the imbroglio was given a boost. Many South Africans—including the panel members—doubted his account of why there was $580,000 (or perhaps more) hidden in, and then stolen from, a sofa at his game farm. Mr Ramaphosa said it came from the sale of buffalo to a Sudanese businessman. On December 5th the hitherto mysterious ungulate shopper, Hazim Mustafa, told Sky News that he had indeed bought the buffalo, which he could not collect because of the pandemic. Moreover, "$580,000 is nothing for a businessman like me. I don't know what the big issue is," he added.

Mr Ramaphosa must still overcome several obstacles in order to keep his job and his reputation. These include investigations by other agencies into the sofa saga, winning his petition to the Constitutional Court and defeating efforts to unseat him by enemies within the ANC. At least he seems game for a fight. ■

Education in Africa

Lessons in poverty

ACCRA, FREETOWN AND PORT LOKO

Will Sierra Leone's big bet on schools pay off?

SIERRA LEONE is one of Africa's poorest countries. About half of its adults cannot read. Its schools, few of which have electricity, are among the world's worst. On any given day, perhaps a fifth of teachers are not in class as they should be.

In an attempt to improve things, Sierra Leone is undertaking a vast but little-noted educational experiment. If it succeeds, the country could write a road map that benefits even much wealthier places. In 2018 an incoming government increased public spending on education, which is now double what it was five years ago. The number of children enrolled in its schools has risen by more than half. With more bums on seats, it is now grappling with a problem that puzzles all of Africa: how to increase the woeful amount that children learn.

Over the past two decades, school-enrolment rates have shot up across sub-Saharan Africa. Yet as few as one in ten children can read by the time they leave primary school (in America and Britain more than 90% can). Politicians often underestimate the scale of this crisis, or waste money on headline-grabbing projects such as computers that do not push up grades.

To boost access and quality, Sierra Leone now allocates 21% of its budget on schools, one of the world's highest rates. Much has gone on abolishing fees for tuition, exams and textbooks that many state schools had previously charged. Now almost two-thirds of youngsters are making it to senior-secondary school, up from a third. Behind his vast desk the president, Julius Maada Bio, says he has had to pinch funding from every other ministry to pay for the reforms. But he says the need for better schooling is "existential".

The government has also tried to squelch other problems that keep youngsters from class. David Moinina Sengeh, the education minister, admits the changes are not always popular. Religious groups resent the junking of a law that had forced schools to expel pregnant schoolgirls. Teachers and parents criticise efforts to spare the cane. But Mr Sengeh, 35, a graduate of Harvard and MIT who records rap music for fun, is adored by donors. One expert ventures that he is "the most exciting education reformer in Africa right now, and arguably around the world".

In a push to improve crummy lessons, the government has asked five organisations to compete to improve children's marks. Each will work with about 70 primary schools for three years. The outfits, which include Save the Children and EducAid, a British charity, will not manage schools directly and cannot hire and fire teachers. But they may spend up to $36 per child on things like coaching for teachers or catch-up classes for children who have fallen behind. Successful ideas will then spread through the whole system.

EducAid, for instance, has set up classes in two small halls in a field near Port Loko, a town about two hours' drive from Freetown, the capital. Those attending it are not pupils. The 70 adults learning new ways of teaching maths are among the 600 members of staff at the schools it is working with. They will all spend time at this centre, sleeping in bunk beds at night.

Trials and error

This experiment has sparked interest not just in the potential innovations in teaching, but also because it offers a big trial of social-impact bonds—a fashionable form of education finance. Donors led by Britain have set aside $18m for the trial. Most of this will be paid only after the work has been done and the exact amount will depend on how successful the organisations are at improving scores. If the results are weak, private investors who are supplying some of these outfits with working capital could walk away with a loss.

The hope is that this kind of "results-based" financing can make education aid more effective—and in so doing make voters in rich countries more willing to keep supporting it. The problem is that setting up these deals, and checking to see whether pay-outs have been earned, can be slow and expensive. The trial in Sierra Leone could breed confidence for more, bigger such ventures. Until now the most notable education bond on the continent has been in South Africa. It delivered investors 14% annual returns but was worth only about $2m (and did not hit all its targets for improving learning).

Sierra Leone's experiments will also inform fiery debates about free schooling. Tuition fees remain common across Africa, especially in secondary schools. Abolishing them is popular. But spending a lot more money on secondary education can be regressive in places where, because of woeful teaching, the poorest pupils drop out before they get there.

In addition, free-schooling policies that are not well funded can make weak systems worse. In nearby Ghana some free senior-secondary schools are so overcrowded that pupils must take turns going to class. Yusuf, a student in Accra, the Ghanaian capital, says that his stints at home last three months at a time.

Mr Sengeh acknowledges that classrooms have become more crowded since fees were abolished. "I'd rather have 80 children in a classroom that is hot and a little noisy than 40 sitting in a spacious room and the rest under a bridge," he says, exaggerating class sizes somewhat to emphasise urgency: "You have to do major…[reforms], all at the same time."

Sierra Leone's gamble on schooling faces big threats, all the same. Prices of food and fuel have been rising all around the world. Its currency, the leone, has fallen by more than 50% this year. A score of people died in the capital in August, amid violence following protests sparked by rising living costs (Mr Bio claimed, implausibly, that it was an attempt to overthrow his government). The president has promised to keep education spending high. But he must face voters again in 2023. A new government might decide that it has more urgent priorities, especially as servicing the country's foreign debts is already chewing up about 22% of state revenues.

Amid all this, the government must show that studious youngsters gain new opportunities. This year about 100,000 teenagers passed exams qualifying them for higher education—the most ever, by some margin. But at present the country's universities and colleges can offer places to only a fraction of them. And the reward for solving this next problem will be yet another challenge: making sure these graduates can find good jobs. Reformers' work is never done. ■



A promise of brighter prospects



Germany

The traffic-light at one

BERLIN

Despite war, inflation, recession and a gas-strapped winter, Germany's ruling coalition is faring rather well

ANGELA MERKEL'S 16-year run as Germany's chancellor was always going to be a hard act to follow. But her triumphant exit was not the sole reason why the new government that clomped onto the stage last December 8th looked bound to put up a poor show. Germans had dubbed the wobbly-looking coalition *die Ampel*, the traffic-light. This referred to the colours of its component parties—red Social Democrats (SPD), yellow Free Democrats (FDP) and the Greens. Yet it also hinted at mixed signals and policy jams. It was no help that the Ampel's leading man was Olaf Scholz, a dry Social Democrat whose electoral success owed less to his charms than to his opponents' gaffes. And then, weeks into the Ampel's opening run, Vladimir Putin, the president of Russia, set the theatre on fire.

Yet Mr Scholz's ensemble has weathered and even emerged stronger from a turbulent first year. Not only has the Ampel steered Europe's richest, most populous country through a crisis as challenging as any that faced Mrs Merkel. It has also set Germany—so far gingerly rather than firmly, it is true—on a course towards potentially far-reaching reform. The coalition has shown it can be supple when needed, with each of its parts bending towards compromise. And Mr Scholz has proved an abler leader than many expected of a weaned-on-a-pickle former mayor of Hamburg. "I think Scholz has the coalition quite well in his grip," says Jana Puglierin of the European Council on Foreign Relations, a think-tank. "He's made it clear that he is the one calling the shots."

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It may sound a small thing for a powerful country's top elected officer simply to show his own team who is boss. But German federalism sharply curbs executive power. Not only must Mr Scholz keep his party loyal and coalition partners happy. He must also play politics across 16 very different states, all but one of which are currently ruled by coalitions, and several of which in any given year will pass a verdict on his party at the polls. The chancellor must meanwhile balance the demands of Germany's grumpiness-prone public and sensation-driven press against the tight constraints of its European Union and NATO alliances. Because of its dark past and current weight, even Germany's friends are quick to blame its leaders for doing too much or too little.

Mrs Merkel handled these competing pressures masterfully. Aside from toughness and intelligence, the four-term chancellor's favoured tool was patience. Her tendency to withhold comment until others had spent their arguments even spawned a verb, *merkeln,* meaning to sit things out. Mr Scholz has clearly studied the master closely. His election campaign last year stressed competence and pragmatism; in Ms Puglierin's words, he presented himself as "Merkel in a suit". In office, Mr Scholz has let younger, telegenic ministers thrash out differences, intervening only at a statesman-like last minute.

The clash within the coalition over en- ▸▸

ergy policy is one example. When Mr Putin's invasion of Ukraine exposed how dangerously dependent Germany had grown on Russian fuel, the Ampel raced to find alternatives. This required the Greens to concede on restarting coal-fed power plants and on speed-building terminals to import LNG, even as the liberal FDP grudgingly allowed more spending (and Social Democrats sheepishly confessed they had been wrong about Russia).

But Robert Habeck, the Green deputy chancellor in charge of energy, for months dug in his heels over whether to prolong the life of Germany's last three nuclear-power plants, which Mrs Merkel long ago pledged to close by the end of this month. Not until October did Mr Scholz dictate a compromise, allowing the plants to keep running until next spring.

As under Mrs Merkel, such strategic patience has helped entrench the coalition and strengthen Mr Scholz's own hold. It has helped the Ampel push through needed policies, such as reform of unemployment benefits and soon-to-come tweaks to immigration laws, freeing manpower-short German businesses to seek imported talent. Yet Mr Scholz's quiet, tactical politics are perhaps better suited to peacetime than to the current global crisis.

What feels like political wisdom in the Berlin chancellery can look to others like foot-dragging or, occasionally, selfish parochialism. European allies were furious when, at the end of September, the Ampel abruptly pledged €200bn to protect German firms and households from raging energy costs. German diplomats were left explaining that no, this huge sum would not undermine joint EU policies because it was, in fact, only a rough number, other countries are doing similar things, and it is to be spread over many years.

Some Germans are unforgiving, too. Dieter Pogel, an accountant enjoying a bustling Christmas market in the port city of Bremen, takes a swig of mulled wine before saying what he thinks about the chancellor. "The Scholzomat talks a lot, but he doesn't do a lot." That is a view shared, if expressed differently, by big chunks of the policy establishment in Berlin. The delight felt when, three days after Russia invaded Ukraine, Mr Scholz declared a *Zeitenwende*, a historic turning point that would see Germany assert itself not just as a political and economic leader, but a military one, has for many turned to disappointment.

The Ampel has indeed stood up for principle over Ukraine, providing lots of money and weapons as well as refuge to 1m Ukrainians. But the €100bn boost pledged to Germany's own long-shrunken defence spending has proved, after months of dither, to mean a rise this year of just 0.2% as a proportion of GDP, and not enough more next year to reach even the modest 2% of GDP that Mrs Merkel had committed, but failed, to spend all the way back in 2014. The defence minister recently admitted that despite nine months of crisis her ministry has failed to order extra ammunition; estimates suggest that under war conditions the German army would run out within days.

Perhaps, taking another cue from Mrs Merkel, Mr Scholz is thinking of the longer term. Sustained for five years, the defence hike will begin to make a difference. By then, the energy transition Mr Habeck dreams of may take hold, too, with Germany's huge investment in emissions-free hydrogen starting to pay off. Current economic woes, including the highest inflation in seven decades (and the sharpest drop in real wages), along with an expected recession in 2023, could also be history.

Ms Puglierin warns of possible downsides. Another surge of refugees, plus prolonged economic doldrums, could bust the budget and push voters towards fringe parties, especially on the far right. Polling already shows a slow slide in support for the Social Democrats and the liberals, though the Greens have more than held their own. Henning Hoff, who edits *Internationale Politik*, a global-affairs quarterly, thinks however that the centre will hold, the coalition partners clinging together to survive and the mainstream opposition, led by the right-of-centre Christian Democratic Union, failing to offer attractive alternatives. "This government looks fragile but is actually quite stable," judges Mr Hoff. "It is condemned to success." ■



The unhappy prince

On December 7th German police arrested 25 alleged members of a far-right group on suspicion of plotting to overthrow the government and replace it with a council headed by a 71-year-old aristocrat who calls himself Prince Heinrich XIII.

Ukraine's Somme

The battle for Bakhmut

Russia is pointlessly hurling troops at a small Ukrainian town

UKRAINIAN OFFENSIVES in Kharkiv in September and Kherson last month have put Russia on the defensive along vast front lines. The exception is Bakhmut, along with Avdiivka to the south. Virtually all Russia's remaining offensive power—which is not much—has been thrown at the town since August. That was originally because it anchors the southern end of a defensive line shielding the bigger cities of Slovyansk and Kramatorsk (see map on next page). But the attacks now seem to be animated more by stubbornness than strategy. Even before the war, the town's population was not much over 70,000.

The offensive has been led by the Wagner Group, a mercenary outfit, and supported by air power, copious artillery and waves of hapless infantry, reinforced in recent weeks by troops withdrawn from Kherson and by newly mobilised men. The regular army fights during the day. Wagner units, better funded and equipped with the latest tanks, come out at night. Elite airborne forces have joined in. For all that, the front lines have hardly budged.

In early December Russia captured three villages (Kurdyumivka, Ozarianivka and Zelenopillya) to the south of Bakhmut, with the aim of severing its supply lines to the west. But attacks to the north towards Soledar have proved fruitless. Russian progress has also come at eye-watering cost. Ukrainian artillery, starved of ammunition in the summer but now replenished by the West, has pounded the Russian attackers.

On December 4th Serhiy Cherevaty, a spokesperson for Ukraine's eastern group of military forces, claimed that 50-100 Russian soldiers were dying every day in the battle, with about the same number wounded. Ukrainian forces in the area face similarly grim conditions. Images published by a Ukrainian soldier show trenches filled with ankle-deep mud and trees defoliated by shelling, lending the battle the feel of the first world war. Drone footage of Bakhmut shows a city that looks as if it has been struck by a nuclear bomb, with only the husks of buildings left.

In many ways, the battle is a microcosm of the war and its politics. Bakhmut is not a strategic town. If Russia were to conquer it, it would not have the manpower to breach further lines of defence to the west. But Vladimir Putin, Russia's president, is desperate for his first victory in almost six months—the last one being Severodonetsk ▸▸



in late June—and happy to feed mobilised men into the meat grinder.

On December 5th Russia launched another wave of missile attacks on Kyiv and other cities. Ukraine claimed to have shot down more than 60 out of 70 incoming missiles, but officials say they are deeply concerned by the small number that continue to get through, leaving the country's energy infrastructure in a desperate state.

The air war is no longer a one-way affair, though. On the same day as the Russian barrage, Russia said that Ukraine had used low-flying Soviet-era drones to strike two air bases, at Ryazan and Saratov, more than 450km (280 miles) over the border, killing three people and damaging long-range bombers. That was no fluke. On December 6th another strike occurred at Khalino air base near Kursk, home to Su-30SM fighter jets. Not since the second world war have air raids struck so deep into Russia. ■

Moscow

The silence of the Russians

MOSCOW

Dissent is muzzled. Resigned acquiescence is the rule

"HAVE THE DOGS turned up yet?" asked 75-year-old Larisa Solodovnikova. The former space engineer is one of a small crowd queuing to hear Ilya Yashin, an opposition politician, make a final plea at Moscow's Meshchansky court. The criminal trial is the most prominent of several dozen being conducted against the few Russians who have dared to challenge the wartime censorship machine. Mr Yashin was accused of spreading "fake news" on YouTube about the Russian army's actions in Bucha, a suburb north of Kyiv where many people died brutal deaths under its brief occupation. Within 40 minutes of the start, a bomb squad had arrived with sniffer dogs to evacuate the courtroom because of a supposed bomb threat, manhandling the unresisting crowd and Ms Solodovnikova onto the frosty street. Mr Yashin faces a nine-year prison sentence.

The world order has been upturned since Vladimir Putin's unprovoked invasion of Ukraine. But if you were to visit the country's capital, you would be forgiven for not noticing it.

Moscow is, as it always is, a challenge to the senses: a mix of brutalism and conspicuous consumption; neo-Soviet and high-tech; Switzerland and North Korea. A few buildings are emblazoned with war murals or the "Z" sign, the brand of Mr Putin's war. Squares in front of stations and the bus terminals in southern Moscow, where minibuses arrive from Crimea, are peppered with grim-faced soldiers, some of them missing arms or legs. Fewer cars are on the road, a reflection of the hundreds of thousands of mobile Russians who have fled. But in the main, the visual changes are unremarkable, helped by a degree of economic stability that comes from high hydrocarbon profits. The government has been largely successful in isolating the capital from the war.

The heart of that isolation is information. The Kremlin once tolerated niche media. Since February it has built great walls around the truth, closing some 260 publications. Twitter, Facebook and Instagram are now blocked, accessible only via VPN proxies. Laws ban discrediting the Russian army (punishable by fines) or publishing "fake news" (punishable by prison). A list, updated on December 1st, criminalises any discussion of over 60 sensitive subjects, from the numbers of Russians killed in action to the country's mobilisation campaign. Anyone who wants an alternative view has to search hard for it. It is difficult to find a VPN that the security services haven't already blocked. The Russian media simply serve up tales of the army "defending" the people of the Donbas.

According to Lev Gudkov, who heads the Levada Centre, Russia's most trustworthy pollsters—considered "foreign agents" by the Kremlin—only about one in five Russians now consume news beyond state propaganda. That figure broadly corresponds to those who are strongly against the war. But there is a spectrum of ignorance. There are the true believers in the war and those who believe it to be an outrage. Most Russians, Mr Gudkov says, are in the middle, choosing to distance themselves and retreat into family life.

As in Soviet times, people are embracing doublethink. Levada's more recent polls have detected a shift in feeling, with a majority now in favour of peace talks. Few respondents feel any responsibility for the war. "People don't want war, but they submissively agree to it because it would cause a serious internal dissonance with their inner self, which still identifies strongly with the state," Mr Gudkov says.

That is an answer those looking on from Ukraine would find infuriating. Yury Saprykin, a prominent Russian editor and journalist, sympathises with Ukrainian frustration. Russian society, he says, never consolidated as Ukrainian society was able to. Now it finds itself atomised and collectively depressed, and in some part reliant on the state. "Totalitarianism makes people very weak. When you add tanks and rockets into the mix, society never stood a chance", he says. Maria Eismont, a lawyer and formerly a journalist for the now-neutered *Vedomosti* newspaper, who is representing Ilya Yashin in the trial, says the Kremlin had long worked to destroy horizontal links. "Treason, set-ups, prison, intimidation, creating divisions and buying loyalty, the authorities did everything to ensure there was no self-organisation."

In his final statement in court on December 5th, her client Mr Yashin called on his supporters to resist. "Stand up for each other," he asked them. "There are many more of us than it seems." Whatever the truth of that assertion, Mr Yashin's strong public stand against the war is for the moment very much a fringe concern. Those Russians who do protest against it are doing so only privately.

The mix of repression and relative economic resilience means that the Kremlin's manufactured consensus is likely to hold for some time to come. "Russians are hostages," said Ms Eismont. "It shouldn't be a surprise that many of them are ready to negotiate with the terrorists." ■


As if nothing ever happened

Ukraine

Smart warfare

Using foreign tech to mitigate Russian destruction

Much of Ukraine is dark. Russian missiles have ensured that millions of households lack electricity. Even so, technology is helping Ukraine survive the present and prepare for the future, thanks to its own efforts and those of friends. Nearly 2,000 miles (3,200km) from Kyiv, a map of Ukraine is a pattern of colourful dots, each marking a place where war damage has occurred. The live tracker at the Scottish headquarters of HALO Trust, a de-mining charity, charts Russian bombings of Ukraine within hours of each incident. Live information about damage, and the ordnance that caused it, used to be near-impossible to obtain. But recent advances make it possible to gain nearly real-time access to data that may prove useful for defence now and rebuilding later.

Before Vladimir Putin invaded Ukraine, the country had a thriving digital economy and tech sector. It is putting it to good use. Volodymyr Zelensky, Ukraine's president, has also been appealing to foreign tech firms to help out. In June he appeared, via hologram, at a series of European tech conferences, urging brainy types to help now, and enjoy investment opportunities in the country later. This has given Ukraine access to a range of innovations.

Foreign IT whizzes minded to help Ukraine are invited to come to Diia City. It cannot be found on a map, though. Diia (meaning "action") is a virtual city, launched by Mr Zelensky earlier this year to attract foreign talent. It has its own legal and tax regime. Virtual residency offers many perks, including tax rebates.

Not all Ukraine's digital helpers are seeking to turn a profit. California-based ESRI, a firm specialising in geographical-information software, has been especially generous. It is supporting HALO in monitoring the damage done by Russian ammunition, and the kind of weapons used.

Usually clean-ups after war are risky and expensive. Knowing what was used, and where, means fewer resources are needed to make territory safe, and that fewer de-miners are injured or killed. Conventional ordnance mapping is rarely possible during active conflict, but HALO is using social media to locate explosions and spots that are contaminated with explosive remnants from, say, cluster bombs. Facebook posts, Instagram images and tweets can all become geotags, which are then pinned to the nearest settlement, using ESRI's software to produce detailed maps.

A second form of damage-mapping is of heritage and cultural sites. Groups such as Skieron, Backup Ukraine and Pixelated Realities are making 3D scans of precious sites and objects, to preserve Ukraine's history. UNESCO has already reported 224 heritage sites in Ukraine as damaged or destroyed. After the war, scans could be used to guide restoration efforts.

3D scans of bombed places may also serve as evidence for the future prosecution of members of Russia's regime. In August, Artec, a Luxembourg-based 3D-product firm, announced a collaboration with the Human Rights Conduct Department of the Ukrainian National Police to expand such evidence-gathering.

Scanning efforts are not limited to bombed sites, however. The Ukrainian National Police has deployed software that uses an AI programme considered controversial in some quarters. Clearview AI, a New York-based firm, waived its fee for use in Ukraine, and its facial-recognition software is now being put to work to identify dead and captive Russian soldiers. In these and other ways—from the 3D printing of buildings to the use of auto-transfusion devices in hospitals—Ukraine is emerging as a hub for trying out some of the latest tech in extreme conditions. ■

French brand names

C'est easy-peasy

PARIS

French brands are mutilating English as well as French

From Louis Vuitton to Hermès, France's luxury brands proudly ooze their quintessential Frenchness. But in many other industries French firms seek to disguise their national origins. AXA, a French insurer, chose a name that means nothing and can be pronounced in all languages. GDF Suez, a French energy firm, renamed itself Engie, a word that apparently "evokes energy...in all cultures". Now a nation forged through a common language, which it doggedly strives to defend, is taking such linguistic mangling to another level.

In recent years the country has succumbed to the meaningless globish beloved of startups the world over. Among its own firms are Mirakl, a French software firm, or Lunchr, which operates a smartcard for meal vouchers (and recently rebranded itself Swile, although to an English ear that sounds like a mixture of swill and bile). A greater delight is France's fondness for brands composed of phonetic misspellings of its own phrases. Kiloutou, which in French sounds like *qui loue tout* or "who hires everything", rents out diggers and mechanical equipment. Kinougarde, a play on *qui nous garde* ("who looks after us"), is a child-care service. Recently the group that owns Buffalo Grill, a restaurant chain which describes itself as "*un steak-house*", renamed itself Napaqaro, which in French (*nappe à carreaux*) sounds like "checked table-cloth".



Who knows what it means?

The latest trend is to apply this phonetic play to English words, which may themselves be unfamiliar, but become even more so in the French rendering. New French brands include Izipizi, a fashionable chain of spectacles which to the English ear sounds like "easy-peasy". Another is Yomoni, an online investor that sounds like "your money". Then there is Heetch, a ride-hailing service that sounds as if a French person is saying "hitch". It is unclear whether the French grasp the English resonance.

To the guardians of linguistic purity all this is an affront. The Académie Française, established by Cardinal Richelieu in 1635, still rules on which foreign words are acceptable. It currently disapproves, for example, of "millennials" in favour of *enfants du numérique*, or "dry January" to which it prefers *janvier sans alcool*. The Académie does not pronounce, however, on brand names. Unless it is a matter of silk scarves or designer handbags, France's ambition to appear on trend globally will mean the ongoing mutilation of its own language, as well as English—all the more so if the *enfants du numérique* have anything to do with it.

Charlemagne | Cancel sculpture

Europe is grappling with its dodgy memorials, a plinth at a time



Memento park, in Budapest's southern suburbs, offers a glimpse of the glorious future communists once promised. Statues of muscular workers lunge confidently forward, the better to crush capitalism; unsuccessfully as it turned out. Dozens of likenesses of Lenin, Marx and their Hungarian ideological enforcers stare into the distance. These monuments dotted the Hungarian capital before central Europe shook off the Soviet yoke in 1989. The open-air museum, inaugurated a few years later, was an elegant solution to an intractable problem: how to place public displays of tyranny out of sight without resorting to the destruction of heritage of the sort tyrants themselves favour. As if to underline the rout of socialism, a "Red Star" gift shop offers joke USSR tin mugs, and visitors can recreate the experience of East German motoring by pushing a beaten-up Trabant around.

The old continent has a lot of history. Some of the figures it once elevated onto plinths are people it now no longer wants to celebrate. Dictators, colonisers and other previously exalted villains are being shunted off their pedestals. In eastern Europe, the Russian invasion of Ukraine has rekindled a campaign to purge any remaining tributes to Soviet "heroes". Farther west, attitudes to the past are evolving at a slower pace.

An almost totalitarian purge of Soviet memorabilia is under way. The Baltics, once part of the Soviet Union and now among Ukraine's most vocal supporters within the European one, are at the forefront. In August authorities in Latvia theatrically toppled an 80-metre monument celebrating the Red Army, to cheering crowds. A week earlier Estonia had carted off a Soviet T-34 tank from its pedestal in the town of Narva to a museum. (A similar model serving as a Soviet memorial in Lysychansk in eastern Ukraine was hauled off its own display, then deployed as a road block to hamper advancing Russian troops.) Raseiniai, a city in Lithuania, covered up a 70-year-old monument to Red Army soldiers in the spring—before removing it a few weeks later. Historical commissions are at work to see what else ought to be taken away. In Estonia alone, some 244 Soviet monuments are to be expunged.

Across eastern Europe old statues of Lenin and hunky Soviet workers disappeared long ago. Poland passed a "de-communisation" law in 2016, decried by critics as an attempt by the state to reshape historical memory. What usually remains are war memorials, which local authorities have been queasier about dismantling. A number of sites have become the subject of bilateral accords with Russia to ensure their preservation. Russian-speaking minorities, for example in Latvia, have defended the monuments. Protests from Moscow that razing monuments is akin to a "war against history" have fallen on scornful ears. Ukraine, which speeded up a purge of Russian symbols after 2014, has found more to do: on November 30th Odessa's city council voted to remove a prominent statue of Catherine the Great. Though she founded the place, as empress of Russia she is no longer welcome.

Germany stands as an outlier. It has over 1,000 Soviet monuments, largely in the formerly communist east. Yet there is no discernible call to do anything about them. That is not to do with the supposed complaisance of politicians in Berlin towards Russia. Rather, broader forces of history and identity are in play. The routing of the Nazis in 1945, and thus Germany's rehabilitation after the war, start with the Red Army. Some 80,000 Soviet troops died in the liberation of the capital and more than 10,000 are buried there. Even though the Russians outstayed their welcome by decades, denial of the Red Army's role in ending the war would open a can of historical worms: erase the Russians from the wartime narrative, and other chapters may need to be rewritten. Best not start. In that spirit the graffiti of young Russians as they captured the Reichstag in 1945 are preserved to this day. Reminders of other dark chapters of German history are fair game: on December 2nd a Berlin square long named after a 19th-century coloniser of west Africa, Gustav Nachtigal, was rechristened after two of his victims.

Other bits of western Europe have their own demons. Germany never tolerated anything resembling a glorification of its Nazi era. Italy has proved more tolerant of its home-grown fascist, Benito Mussolini, for whom Italy's new prime minister, Giorgia Meloni, has in the past expressed admiration. Last month a research institute in Milan unveiled a list of 1,400 monuments, street names and plaques that glorify the fascist regime in power from 1922. Some monuments are hardly difficult to pinpoint, including a 36-metre obelisk in Rome with the inscription "Mussolini Dux". The grand Palazzo della Civiltà Italiana, also in the capital, is adorned with a quote from *Il Duce*. Far from being consigned to history, today it serves as the headquarters for Fendi, a fashion house.

Spain has been tackling its own dodgy monuments. In October a "Law of Democratic Memory" was passed. Among other things it aims to "redefine" the Valley of the Fallen, a giant memorial to its civil war in the 1930s which had come to serve as a final resting place for Francisco Franco and his fascist acolytes. Built outside Madrid using slave labour, the monument long served as a rallying point for Franco's enduring fans. The man himself was exhumed from there in 2019, and other graves are now being moved. The right-wing opposition has vowed to reverse the law once in power.

How the mighty have fallen

The moving of statues, let alone their destruction, opens up debates about the role of the state in remembering. There are other solutions. In Budapest, not every artefact could be moved to Memento Park. In the centre of town, an imposing monument lauding Soviet troops that liberated the city endures. For that, a novel plan was hatched: in 2011 it was ideologically neutralised by the erection nearby of a statue of Ronald Reagan. As if America's communist-basher-in-chief needed reinforcement in his final staredown, a likeness of George H.W. Bush was added two years ago. ■



Manchester

The sputtering engine of the north

MANCHESTER

It has acquired some powers over the years, which it has used pretty well. But Greater Manchester remains trapped in Westminster's orbit

BRITAIN'S GROWTH CRISIS

TO EXPERIENCE THE full Manchester effect, you need to arrive from somewhere other than London. Compared with the capital's crammed skyline, central Manchester's burgeoning collection of tall towers looks gappy—closer to Croydon, in south London, than the City. Although its tram network is much more modern than the London Underground, Manchester's seems quaint, and not nearly sufficient for such a large conurbation. Only by comparison with other northern or Midlands cities does the metropolis seem like a vision of urban prosperity.

Its economy is strong—but, again, only by comparison with other northern English cities. Productivity in Greater Manchester, a cluster of ten boroughs centred on the City of Manchester, is nine-tenths of the British average, which is boosted greatly by London. International yardsticks are even less flattering. Whereas London is about as rich as Paris, Manchester is poorer than most secondary cities in France and Germany (see chart on next page).

Manchester is not a runaway success, then. But that is precisely why it is important. As the home of almost one in five people living in the north of England, it determines the fortunes of a huge chunk of the country. "Levelling up", the folksy term for regional economic rebalancing popularised by the last-but-one prime minister, Boris Johnson, is either driven by Greater Manchester or does not happen at all.

It is also important because, more than any other English conurbation including London, Greater Manchester has plans for its future development, to which most local politicians have signed up. The contrast with Britain's shambolic national government is plainer still. As Andy Burnham, the mayor of Greater Manchester, delicately puts it: "We're very clear about where we're going, at a time when the government might not be." Despite grabbing some powers from the centre, though, local leaders lack the means to get there.

The city exploded in the 19th century, as its cotton mills sucked in workers from the rest of Britain and Ireland. The chaotic, disease-ridden metropolis shocked observers like Alexis de Tocqueville and Friedrich Engels, the scion of a German cotton family who was sent there in a failed attempt to shake his radical views.

Cotton gave Manchester a distinct form and culture. By the end of the century the city centre was dominated by warehouses and showrooms. Railway lines radiated outward to nearby towns, where much of the spinning was done. The effects on the metropolis long outlasted the cotton industry. Manchester city centre was home to fewer than 1,000 people by the 1980s, according to the local council. And the conurbation never quite lost its sense of common purpose. That makes it different from other urban areas in Britain. ▸▸

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In 2009 the ten boroughs formed a combined authority; in 2017 the whole area got an elected mayor. Collectively they have acquired some clout over planning, transport, health and adult education, as well as very limited tax-raising powers. The identity of the area seems to be strengthening. It is fine to describe Salford or Wigan as Greater Manchester. If you were to call Coventry "Greater Birmingham" or Bath "Greater Bristol" you would be run out of town.

Because the post-industrial city centre was so thinly populated, there has been little to stop an eruption of high-rise housing and offices. The collective population of the two most central boroughs, Manchester and Salford, has risen from 640,000 to 822,000 over the past two decades, with the fastest growth in the urban core.

Greater Manchester's architects are following the dictum that cities should try to maximise "agglomeration effects". As an independent review laid out in 2009, urban businesses thrive not primarily because they are near other firms in the same industry but because they can tap a deep talent pool. The goal is to create a dynamic centre and connect everywhere else to it.

The cities of Manchester and Salford have plainly benefited. Salford has used the proceeds of development to stave off the worst effects of austerity, says its mayor, Paul Dennett. Manchester seems to be developing a more aspirational culture. Since 2010 GCSE results in the city have gone from being much the worst of any borough in Greater Manchester to middling. Manchester now sends a higher proportion of young people to university than any borough except Trafford, which is much less poor (see map).

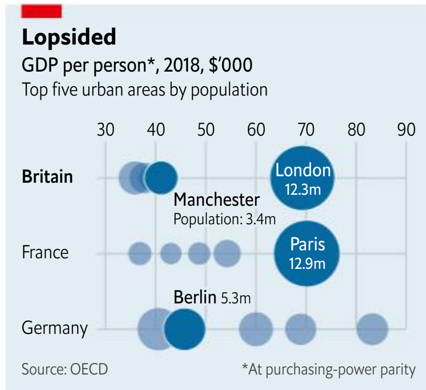
The gradually expanding tram network connects outlying boroughs to the city centre, which has helped persuade people that their fortunes are tied to it. "Rochdale wants the city centre to boom," says John Blundell, a councillor there. Its success causes people to "climb up the railway line" to his patch, where houses are cheaper. Officials across the metropolis are now trying to push people and jobs to the generally poorer northern boroughs.

The metropolis is almost a one-party state, with eight of its ten boroughs controlled by Labour. Its leaders are strongly pro-development, and shed few tears when fields give way to housing. That irks some people. In Trafford, Marj Powner is campaigning to protect some soggy fields—which, although part of Greater Manchester's green belt, are slated for 5,000 homes and warehouses. The politicians argue that a small reduction of green-belt land is needed for economic growth, she says. "Our premise is, let's make a small net reduction in growth in order to protect the green belt."

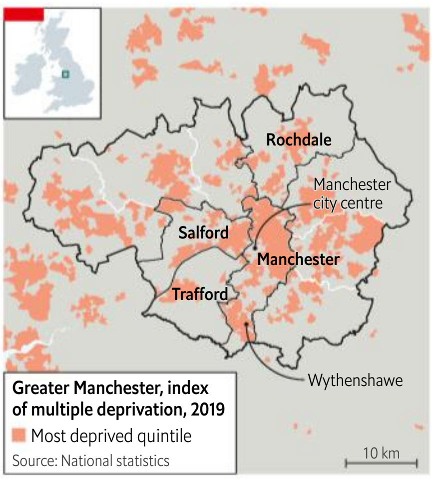
Hers is a widespread view. In September *The Economist* asked Britons whether they would rather have more homes or more local planning control and protections for the countryside. They broke more than two-to-one for less development. But opposition in Greater Manchester is less fierce than it might be. Nine out of the ten boroughs have created a plan, called Places for Everyone, which accepts the government's projection that 165,000 additional homes should be built by 2037. The plan allows boroughs like Trafford to build less than their fair share, and others such as Rochdale and Salford to build more. It may not survive exactly as written. Still, Greater Manchester seems more likely to get maximum development for minimum fuss than other metropolises.

Politicians are also pulling hard on the other big lever available to them: transport. Like all English cities outside London, Greater Manchester has a mostly deregulated, privatised bus system. Next year it will become the first to introduce bus franchising. Officials will decide routes and timetables; private companies will run the services. Franchising ought to make public transport more co-ordinated and simpler to use—crucial in a metropolis where 31% of households lack a car. The trouble, however, is that Manchester lacks an Underground to cross-subsidise its franchised bus network, and has failed to bring in a congestion charge or a pollution charge. It is likely to depend on government grants.

This pattern, of Greater Manchester furiously innovating and trying to change its fortunes but continuing to depend on Westminster, is evident in other areas. The metropolis has set a target of 2038 to reach net-zero carbon emissions, which is improbable. More realistically, Mr Burnham hopes that a scheme to build tens of thousands of new zero-carbon affordable homes and retrofit others could provide decent jobs for Mancunians and give them expertise that they could then sell to other cities. But that ambition too will probably require government funding.



Lopsided
GDP per person*, 2018, $'000
Top five urban areas by population
Source: OECD *At purchasing-power parity



Greater Manchester, index of multiple deprivation, 2019
Most deprived quintile
Source: National statistics

Its councils acquired some control over health in 2014, and set about trying to improve people's diets and wean them off cigarettes. That may have had some effect: a recent study in the *Lancet* estimated that life expectancy in Greater Manchester rose by one-fifth of a year between 2014 and 2019, relative to similar places. Other locally designed, centrally funded schemes, known collectively as "Working Well", seem to have improved the prospects of people prevented from working by illness.

But the health system is now struggling with the same problems of high demand and insufficient staff that bedevil the entire National Health Service, with few powerful local tools available. Ill-health remains a huge economic problem as well as a personal blight. In October a review of the metropolis found that rates of recent physical and mental illness explain three-quarters of the neighbourhood-to-neighbourhood variation in the employment rate.

Economic shocks tend to hit the people of Greater Manchester hard and reverberate for a long time. Before covid-19 struck, the metropolitan unemployment rate tracked the English rate almost precisely. It then jumped to more than one percentage point higher, where it has stuck. Now people are struggling with inflation. "I don't think I've seen people so desperate as I do now," says Sarah Woolley at the Benchill Community Centre in Wythenshawe, a giant council estate in south Manchester. She speaks with 28 years' experience.

Greater Manchester is ahead of others when it comes to devising clever solutions to social and economic problems. But the resources available to local politicians are not truly adequate to the task. One telling sign is that Mr Dennett, the mayor of Salford, says that a big advantage of Greater Manchester's authorities working so well together is that they can more effectively lobby the government in Westminster. "We are one of the most centralised democracies in the Western world," he says, by way of explanation. That tells you both why Manchester does comparatively well, and why it cannot soar. ■

Constitutional reform

A test of radicalism

Will Sir Keir Starmer adopt the idea of social rights?

SIR KEIR STARMER, the leader of the Labour Party, is a bit of a riddle. As a young lawyer in the 1990s, he was a rising star of the human-rights bar. He helped free death-row prisoners in Africa, won titanic free-speech trials and became the joint head of his cutting-edge chambers.

As a politician, seeking to win over socially conservative voters, he has made more of his later years as a ramrod-straight public prosecutor. His speeches are plodding; his persona patriotic, cautious and dependable. If he made it to Downing Street, would any glimmer of that young radical survive? A dense paper on constitutional reform, prepared for Sir Keir by Gordon Brown, Labour's prime minister from 2007 to 2010, suggests it might.

The paper, which was unveiled on December 5th, is meant to lay the groundwork for the party's manifesto at the next election. It proposes scrapping the largely appointed House of Lords and replacing it with a new Assembly of the Nations and Regions. It recommends a deep clean of Westminster: a stricter political-ethics regime, tighter oversight of public appointments and a ban on MPs taking most external jobs. It has some sensible ideas for giving more power to local authorities.

But the real radicalism lies in a proposal for a new generation of "social rights". Free education and free health care are the things that first come to mind when Britons think about their citizenship, Mr Brown's paper argues. Access to these things should be entrenched much like civil rights ("No person shall be denied emergency treatment", for example, and "no person shall be left destitute").

A Labour government could go still further, Mr Brown suggests, and create rights relating to fair working conditions and culture. He floats the idea of a bold constitutional obligation to even out Britain's patchy economy. Overseeing it all would be the newly empowered upper chamber of Parliament, protecting such statutes from being easily amended by MPs and thus creating a de facto written constitution.

Sir Keir is not bound to adopt any of these proposals. But as Yuan Yi Zhu of Policy Exchange, a think-tank, notes in a forthcoming paper, delivering social change through sweeping and enforceable legal rights has been the work of the Labour leader's career. Writing in *Socialist Lawyer*, a journal, in 1995, Sir Keir called his goal the "distribution not only of political power, but also of economic power". The fear that Britain would miss out on "next-generation rights" in areas like online privacy and the environment was one reason why he opposed Brexit.

Left-wing governments elsewhere have tried entrenching "social rights" in constitutions; they are especially popular in Latin America. But they are not always effective. A right to emergency treatment does not of itself pay for hospital beds. Given the state of the National Health Service in particular, there would be plenty for would-be litigants to get their teeth into. Promising the public a constitutional right to a better deal is a cheap thing for a party in opposition to offer. It would be an expensive pledge to keep in office. Whether Sir Keir adopts the idea of social rights will help answer the question of how brightly the fire of radicalism still burns within him. ■

Inflation

Tapped out

LEEDS

It costs beermakers far more than it did to brew a pint

IN THE TAP room at Northern Monk, a craft brewery, Russell Bisset's immediate concern is the cocktail—beer, forest-fruit gin and fresh muddled raspberries—that will be sold at that evening's football World Cup game. But his real worry is soaring costs. The brewing industry is particularly reliant on things that are getting pricier. Mr Bisset, who owns Northern Monk, says it costs about 26% more to brew a pint now than it did in 2021. BrewDog, the country's largest craft brewer, reckons something similar. For comparison, annual consumer-price inflation is running at 11.1%.



Caught on the hops

The biggest problem is the cost of energy. It takes a lot of energy to heat water to steep malted grains; boil the wort (the sugary liquid created from the steeped grains); control the temperature of fermenting beer; and package the final product. In a survey of its members, the British Beer and Pub Association found that, even with the government's price guarantee, brewers' expected energy spending in 2023 will be as much as 140% higher than in the year before the pandemic.

Expensive energy has secondary effects. Craft breweries use liquid carbon dioxide, a by-product of other industrial manufacturing processes, to store, move and carbonate beer. The largest supplier of carbon dioxide in England is a firm that owns fertiliser factories; spikes in the price of natural gas prompted these factories to stop production earlier this year because the bills were unaffordable. In August some brewers were being quoted carbon-dioxide prices 30 times higher than a year before (things have since steadied).

Other inputs are also getting pricier. The cost of grains like barley and wheat spiked in the spring and summer with the war in Ukraine. Prices have since fallen, but are still well above pre-pandemic levels. Craft beermakers import hops from America, where growers breed varieties with aromatic flavours like stone fruit and citrus. Mr Bisset reckons he spends 16% more on hops now than he did a year ago; about half of that rise is because of fluctuations in the sterling-dollar exchange rate. The price of aluminium for cans and glass for bottles is rising; labour, too.

In better times, brewers might already have passed these costs on to drinkers. But that has been hard during a cost-of-living crisis, particularly after a planned freeze on beer duties was scrapped as part of the government's autumn statement last month. The price of alcoholic drinks has risen more slowly than overall inflation. To preserve profits, brewers are getting creative—tweaking their processes to extract maximum flavour out of each hop, replacing carbon dioxide with cheaper nitrogen or propagating their own yeast.

An extended run for the England team at the World Cup, allied to the usual end-of-year celebrations, would help (though perhaps not in Scotland). But a raft of planned railway strikes may hurt footfall. And once revenues fall back after the holidays, brewers are likely to start charging more. At Northern Monk, Mr Bisset plans a price increase of 11% in January. Oliver Robinson of Robinsons Brewery, a Stockport-based company, intends to raise prices in March; so does BrewDog. Britons will soon find it dearer to drown their sorrows. ■

Bagehot | Mind your manners (or go to jail)

Britain's actual problem with free speech



AT TIMES, THE rise of Captain Tom Moore felt like a fever dream. When Britain entered lockdown in March 2020, the 99-year-old veteran of the second world war began doing laps of his garden on a Zimmer frame to raise money for an NHS charity. He intended to raise £1,000 ($1,215); instead he managed £33m. The queen gave him a knighthood. An execrable rendition of "You'll Never Walk Alone", featuring Captain Tom, Michael Ball and a choir of nurses hit number one. A gin bearing his name was brought out. On New Year's Eve that year, his image was plastered across London's night sky by 300 glowing drones.

But the oddest part of the story came after Captain Tom died, in February 2021. In response Joe Kelly, a Celtic fan from Glasgow, tweeted: "The only good Brit soldier is a deed one, burn auld fella, buuuuurn". For that tweet, which was online for 20 minutes before he deleted it, Mr Kelly was charged and threatened with jail. He was eventually sentenced to 150 hours of community service and placed under supervision for 18 months.

Being offensive is an offence in Britain. Under the Communications Act of 2003 anyone sending a "grossly offensive" or "indecent" message, whether in a tweet or on WhatsApp, can face jail. A law whose origins lie in attempts to stop perverted men panting down the phone at female telephone operators in the 1930s is now used to prosecute brainless tweets. The upshot is that it is, in effect, illegal to be rude on the internet.

For a government that portrays itself as the protector of free speech, this is a sorry affair. Conservative ministers may despair at "cancel culture" or the excesses of censorious students. Yet when it comes to something much more fundamental—restricting the ability of the state to jail someone for speaking out of turn—the government is happy to maintain a deeply illiberal status quo.

A plan to ditch the clause that nearly sent Mr Kelly to jail has been scrapped. It was set to be replaced as part of a raft of wider reforms to online life. Under the proposal, only messages that caused serious distress would be punishable, rather than merely grossly offensive ones. The move was recommended by the Law Commission, a body that suggests legal changes. But the government ditched the idea in November after criticism from MPs. Instead, the rotten old clause will remain on the statute book.

Cowardice over existing laws has been accompanied by hasty crackdowns on speech and protest elsewhere. After a statue of Winston Churchill was vandalised during protests in London in 2020, Conservative MPs demanded stricter rules. Anyone damaging a memorial, as sometimes happens during demonstrations, can face as much as a decade in jail.That may be popular. But it is not the mark of a self-confident society or of a government that is dedicated to free expression.

Instead, a cartoonish version of the free-speech debate prevails, one which too often boils down to the middle-aged being annoyed with their teenaged children. The Conservative government is pushing through Potemkin legislation on freedom of speech in universities. Before the pandemic, 0.2% of events at universities featuring outside speakers were cancelled. Under the new law universities and student unions will be forced to allow what they already allow. The activities of a few students overshadow the far more egregious problem of the state jailing people for expressing an opinion.

Labour, which has an authoritarian streak, is unwilling to touch the topic. Sir Keir Starmer, the Labour leader, started his career as a thrusting human-rights lawyer, fighting the jackboot of authority. Later he acquired a taste for boot-leather as Britain's director of public prosecutions. Sir Keir was in the job when the Crown Prosecution Service pursued Paul Chambers, a harmless bonehead who tweeted an obviously insincere bomb threat at Doncaster airport and was prosecuted under the Communications Act. (His conviction was eventually overturned.)

Many of those in breach of the law deserve little sympathy. Earlier this year two police officers were sentenced to 12 weeks in jail for sharing appalling messages with Wayne Couzens, a police officer subsequently convicted of kidnap and murder. (An appeal is in process.) Had the conversations happened in private in one of their homes, it is likely that no charges would have been possible. Abhorrent behaviour that is legal in the real world should also be legal in a WhatsApp chat, a rambling private conversation in text form. Cardinal Richelieu once said: "If you give me six lines written by the hand of the most honest of men, I will find something in them which will hang him." When laws are too broad, too many people end up on the rope.

Tweet in haste, repent in jail

Freedom of speech is one of many areas where government rhetoric does not match reality. Sometimes this deficit is a good thing. The Tories have failed to reform or revoke the Human Rights Act, even though they first pledged to do so in 2010. Nor have they done anything about equalities legislation or asylum law, despite promising action for years. But when it comes to free speech, the government's inertia is a problem.

Others are taking action. With no domestic remedies available, Mr Kelly intends to challenge his conviction at the European Court of Human Rights. So far he has raised £18,000 to do so, helped by the Free Speech Union, a campaign group. It would be perverse if a government dedicated to defending free speech and promoting sovereignty removed an illiberal law only at the behest of oft-maligned "foreign judges". People assume that freedom of speech is as British as queuing or the king, as if the country has always enjoyed its own version of America's first amendment. But illiberal ideas on free speech have a greater hold on the national psyche. If the government is serious about protecting freedom of expression, it should start with its own laws. ■



Deep-sea fishing

An uneven contest

BEIJING, DAKAR, JAKARTA AND SINGAPORE

China's deep-water fishing fleet is the world's biggest—and most rapacious

FROM HIS shack, Mamadou Sarr points to more than 100 brightly painted pirogues hauled up above the Atlantic surf on Ouakam beach in Dakar, the capital of Senegal. In normal times they would be out fishing. But the dozen boats that ventured out that day had come back with barely any fish. Mr Sarr, who heads the local fishing association, opens boxes that would once have been full of bream and grouper to reveal only flies. At the beachside market, a woman sleeps on the table upon which she would usually gut fish.

A story of scarcity runs up and down the once bountiful coast of west Africa. There, communities of "artisanal" fishermen, who fish for subsistence and for the local market, are buffeted by forces shaped on the far side of the world, in China. For at least three decades that country's central and local governments have encouraged the development of a long-distance fishing fleet, equipping boats that stay at sea for months or even years.

China is not the only state with an eye on protein and profit far from its own waters. Japan, South Korea, Spain and Taiwan have fleets of their own. But it is by far the biggest. Some estimates put its size at over 3,600 boats, as many as the next three biggest combined. And unlike others' fleets, China's consciously projects state power and influence, sometimes as part of Xi Jinping's signature economic and geopolitical project, the Belt and Road Initiative (BRI). A significant number of Chinese vessels are state-owned.

A third differentiating feature is the fleet's rapaciousness and lack of scruple in an industry notorious for both. In its wake comes overfishing, some of which is outright illegal; the collapse of local stocks; smuggling; links to organised crime; and the forced labour and general mistreatment of those who serve on the boats.

All these factors are now playing out off the coast near Mr Sarr's shack. The Chinese government publishes a list of foreign countries within whose 200-nautical-mile (370km) "exclusive economic zones" (EEZS) it has agreed contracts for fisheries operations. Over half of such agreements have been made with west African countries. Senegal is one. Mauritania to the north, vast and poor, accounts for nearly 30% of the total by itself.

The projects include not just the rights for Chinese vessels to fish in states' coastal waters, but also to establish operations such as processing plants ashore. Mauritania has become a hub in the industry for fishmeal and fish oil. Such products are bought by aquaculture farms that raise fish for customers in China and other countries. The sorts of fish hoovered up to make them include those long fished by locals using small boats and hand nets.

As the Environmental Justice Foundation, a London-based NGO, points out in a report released in March, all this has "transformed the political ecology" of fishing in west Africa. Locals who depend on small-scale fisheries to put food on the family table are forced into direct competition with Chinese industrial fishing concerns. It is an lopsided struggle.

It is not only fish stocks themselves that attract China's fleets. So too do jurisdictions with poor governance, toothless rules and ample scope for buying influence. One small example is highlighted by the Outlaw Ocean Project, an American

NGO. In 2017 a Chinese fishmeal plant in the Gambia, a BRI-branded project, turned a lagoon at the heart of a wildlife reserve crimson with illegally dumped arsenic, nitrates and phosphates. The operator was fined just $25,000 and allowed to continue operating—and dumping.

Sometimes the rules are ignored entirely. Illegal, unreported and unregulated (IUU) fishing is rife among the Chinese fleet. Vessels exceed catch limits, kill protected species or fish where they should not (such as inshore zones reserved for artisanal fishermen). All that puts further pressure on the world's seas, which are already fished nearly to capacity (see chart). Locally flagged vessels often conceal their Chinese ownership behind shell companies or joint ventures. Although foreign vessels are not allowed to fish in Ghanaian waters, much of its fleet is ultimately controlled by Chinese interests.

Fishy business

One common illegal practice in Ghanaian waters is *saiko*—the transfer at sea of frozen, often illegally caught, fish from big trawlers to small canoes, which run their cargoes ashore under cover of night for sale in local markets. Due partly to *saiko*, Ghana's stocks of sardinella—one type of sardine—have collapsed. And the smuggling forges links between Chinese fishermen and the local organised-crime groups that oversee fish markets on land.

Back on Ouakam beach, Mr Sarr says that Chinese vessels bending the rules "rub salt in the wounds". Chinese boats masquerading as Senegalese ones barely bother to hide their origin. A self-respecting Senegalese boat, he says, "should be called something like *Mamadou* or *Fatou*". Instead, the boats' names are in Chinese script "that we cannot even read". Mr Sarr worries that unemployed fishermen will join gangs, or attempt the illegal and often lethal voyage to the Canary Islands for work. There are instances of impoverished fishwives forced into prostitution.

Neither sharp practices nor outright criminality are confined to the waters off Africa. Three years ago a huge "dark" fleet that was fishing for squid came to light thanks to sleuthing by Global Fishing Watch (GFW), an NGO set up with help from Google, a tech firm, and others. The boats had attempted to disappear by switching off transponders that are supposed to broadcast a vessel's identity and position. But by overlaying the fleet's radio traffic with satellite imagery, GFW discovered up to 900 boats fishing for squid within North Korea's EEZ. That was certainly illegal—either it was poaching on an industrial scale or, if the fishing had been agreed with North Korea's authorities, a violation of UN sanctions against that country.

The following year, the fleet (now 600-strong) was tracked to a patch of the Pacific Ocean just outside the EEZ surrounding the Galapagos islands, which belong to Ecuador. Hundreds of Chinese vessels have also pressed up against Argentina's EEZ in the southern Atlantic. In 2021 Trygg Mat Tracking, a Norwegian NGO which tracks IUU fishing, confirmed the presence of hundreds of Chinese vessels in a new high-seas squid fishery in the north-west corner of the Indian Ocean, this time butting up against the EEZs of Yemen and Oman.

Fishing for squid in international waters is not necessarily illegal. In the north-western Indian Ocean, squid are excluded from regional agreements that regulate the harvesting of other sorts of marine wildlife, like tuna. But squid do not care about EEZs, and heavy fishing near another country's waters is bound to affect its own catch within them. Since squid are prey for other species, including tuna, overfishing will have knock-on effects for other species too. And rapacious techniques are often suggestive of outright illegal activities in other areas. Evidence is mounting that these fleets are catching tuna for which they have no quota, finning sharks and killing other protected species.

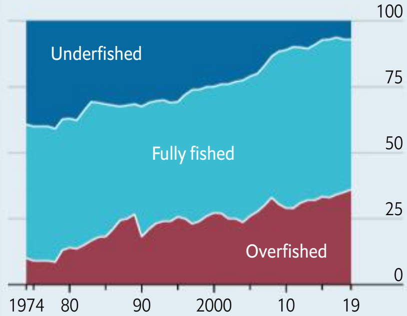
The treatment of humans can be shabby too. Fishing crews often include migrant workers from poor countries. Many are recruited by unscrupulous agencies that charge crippling commissions, and which withhold pay and passports. Vessels from several countries, including Taiwan, are notorious for mistreating their crews. Once again, though, it is China that has the worst reputation of all.

Bright Tsai, a Ghanaian who worked on Chinese boats for 18 years, says that whereas Chinese officers and crew members slept below, he and his fellow west Africans slept on top of nets on deck. One cabin, its air-conditioner blasting away, was given over to fresh vegetables for Chinese crew members; the Ghanaians were fed garri, a cassava flour staple, rice and tomato paste—"always," Mr Tsai says.

Abuse is rife. Yadi Gunawan, a 34-year-old Indonesian former crew member on a Chinese squid boat, says he was kicked and beaten to get him to haul the nets faster, or as punishment for falling asleep on watch. As for Mr Tsai, when one chief engineer beat him with a piece of wood, he went to the Ghanaian police. They told him to settlethe case—he thinks they were bribed. That mix of negligence and malevolence sometimes proves fatal. The most notorious case involved the *Long Xing 629*, a Chinese boat on which four Indonesians died over four months in 2019-20.

Not so many fish in the sea

Global marine fish stocks, %



Source: FAO

Ocean sunlight

Still, the "dark fleets" do not have everything their own way. Satellite imagery increasingly helps fishing authorities and NGOs keep track of where boats are and what they are up to. In the face of international criticism, China issued regulations in 2020 to limit high-seas squid-fishing. In May it announced a three-month moratorium for the north-west Indian Ocean. Such moratoriums are only "voluntary", and apply to times of year when stocks are relatively less abundant. The reforms may be half-hearted, but they suggest that making the fleet's activities public has at least some power to change behaviour.

More formal rules are coming, at least on paper. China's latest five-year plan for the industry, published earlier this year, promised to crack down on IUU fishing and to more tightly control the size of distant-water fleets. But it was short on detail, and though there is official talk of capping the numbers of vessels, there is little suggestion of reducing them.

A recent agreement at the WTO, meanwhile, aims to cut global fishing subsidies. Once again, China is the world's biggest subsidiser of fishing operations, paying around $2bn a year for things like fuel subsidies and tax incentives to build new boats. Local authorities in China have announced limits on cheap fuel, sometimes in return for paying fishermen for observing no-fishing periods. But the changes do not apply to distant-water vessels. In March China actually increased subsidies to two state-owned tuna firms.

Campaigners argue that still more sunlight is needed. The Stimson Centre, a think-tank in Washington, DC, argues that fishing-access agreements that countries sign with China should be made public. Vessels should be compelled to broadcast their position. Fees paid to coastal states should go towards strengthening enforcement capacity. Mark Zimring of The Nature Conservancy, another NGO, says seafood-importing countries should insist on proof of provenance for what they buy. These improvements should apply to all countries with distant-water fleets. If China cares about its image, it would be in its own interest to lead the way. ■



Information technology

The new age of AI

SAN FRANCISCO

Artificial intelligence is at last permeating swathes of the business world

THE MACHINES are coming for your crops—at least in a few fields in America. This autumn John Deere, a tractor-maker, shipped its first fleet of fully self-driving machines to farmers. The tilling tractors are equipped with six cameras which use artificial intelligence (AI) to recognise obstacles and manoeuvre out of the way. Julian Sanchez, who runs the firm's emerging-technology unit, estimates that about half the vehicles John Deere sells have some AI capabilities. That includes systems which use onboard cameras to detect weeds among the crops and then spray pesticides, and combine harvesters which automatically alter their own setting to waste as little grain as possible. Mr Sanchez says that for a medium-sized farm, the additional cost of buying an AI-enhanced tractor is recouped in two to three years.

For decades starry-eyed technologists have claimed that AI will upend the business world, creating enormous benefits for firms and customers. John Deere is not the only proof that this is happening at last. A survey by McKinsey, a consultancy, found that this year 50% of firms across the world had tried to use AI in some way, up from 20% in 2017. Powerful new "foundation" models are fast moving from the lab to the real world. ChatGPT, a new AI tool that has recently been released for public testing, is making waves for its ability to craft clever jokes and explain scientific concepts (see next article). But excitement is also palpable among corporate users of AI, its developers and those developers' venture-capital backers. Many of them attended a week-long jamboree hosted in Las Vegas by Amazon Web Services, the tech giant's cloud-computing arm. The event, which ended on December 2nd, was packed with talks and workshops on AI. Among the busiest booths in the exhibition hall were those of AI firms such as Dataiku and Blackbook.ai.

The buzzing AI scene is an exception to the downbeat mood across techdom, which is in the midst of a deep slump. In 2022 venture capitalists have ploughed $67bn into firms that claim to specialise in AI, according to PitchBook, a data firm. The share of VC deals globally involving such startups has ticked up since mid-2021, to 15% so far this quarter (see chart 1 on next page). Between January and October, 28 new AI unicorns (private startups valued at $1bn or more) have been minted. Microsoft is said to be in talks to increase its stake in OpenAI, a builder of foundation models and ChatGPT's provider. Alphabet, Google's parent company, is reportedly planning to invest $200m in Cohere, a rival to OpenAI. At least 22 AI startups have been launched by alumni of OpenAI and Deepmind, one of Alphabet's AI labs, according ▸▸

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to a report by Ian Hogarth and Nathan Benaich, two British entrepreneurs.

The exuberance is not confined to Silicon Valley. Big firms of all sorts are desperate for AI talent. In the past 12 months large American firms in the S&P 500 index have acquired 52 AI startups, compared with 24 purchases in 2017, according to PitchBook. PredictLeads, another data provider, notes that the same group of firms posted around 7,000 job ads a month for AI and machine-learning experts in the three months to November, about ten times more than in the first quarter of 2020 (see chart 2). Derek Zanutto of CapitalG, one of Alphabet's VC divisions, notes that large firms spent years collecting data and investing in related technology. Now they want to use this "data stack" to their advantage. AI offers ways to do so.

Unsurprisingly, the first industry to embrace AI was the technology sector. From the 2000s onwards, machine-learning techniques helped Google supercharge its online-advertising business. Now it uses AI to improve search results, finish your sentences in Gmail and work out ways to cut energy use in its data centres, among other things. Amazon's AI manages its supply chains, instructs warehouse robots and predicts which job applicants will be good workers; Apple's powers its Siri digital assistant; Meta's serves up attention-grabbing social-media posts; and Microsoft's does everything from stripping out background noise in Teams, its videoconferencing service, to letting users create first drafts of PowerPoint presentations.

Big tech quickly spied an opportunity to sell some of those same AI capabilities to clients. Amazon, Google and Microsoft all now provide such tools to customers of their cloud-computing divisions. Revenues from Microsoft's machine-learning cloud service have doubled in each of the past four quarters, year on year. Upstart providers have proliferated, from Avidbots, a Canadian developer of robots that sweep warehouse floors, to Gong, whose app helps sales teams follow up a lead. Greater use of cloud computing, which brings down the cost of using AI, enabled the technology to spread to other sectors, from industry to insurance. You may not see it, but these days AI is everywhere.

Dulling the cutting edge

In 2006 Nick Bostrom of Oxford University observed that "once something becomes useful enough and common enough it's not labelled AI any more". Ali Ghodsi, boss of Databricks, a company that helps customers manage data for AI applications, sees an explosion of such "boring AI". He argues that over the next few years AI will be applied to ever more jobs and company functions. Lots of small improvements in AI's predictive power can add up to better

The artificial-intelligence quotient 1

Worldwide share of venture-capital deals involving an artificial-intelligence/machine-learning company, %



Source: PitchBook *At December 6th

products and big savings.

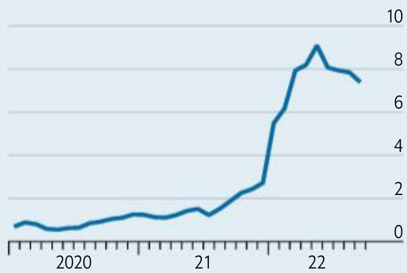
This is especially true in less flashy areas where firms are already using some kind of analytics, such as managing supply chains. When in September Hurricane Ian forced Walmart to shut a large distribution hub, halting the flow of goods to supermarkets in Florida, the retailer used a new AI-powered simulation of its supply chain to reroute deliveries from other hubs and predict how demand for goods would change after the storm. Thanks to AI this took hours rather than days, says Srini Venkatesan of Walmart's tech division.

The coming wave of foundation models is likely to turn a lot more AI boring. These algorithms hold two big promises for business. The first is that foundation models are capable of generating new content. Stability AI and Midjourney, two startups, build generative models which create new images for a given prompt. Request a dog on a unicycle in the style of Picasso—or, less frivolously, a logo for a new startup—and the algorithm conjures it up in a minute or so. Other startups build applications on top of other companies' foundation models. Jasper and Copy.AI both pay OpenAI for access to GPT3, which enables their applications to convert simple prompts into marketing copy.

The second advantage is that, once

The robots are bringing your jobs 2

S&P 500 companies, number of job adverts mentioning artificial-intelligence-related skills* '000



Source: PredictLeads *Three-month moving average

trained, foundation AIs are good at performing a variety of tasks rather than a single specialised one. Take GPT3, a natural-language model developed by OpenAI, which forms the basis for ChatGPT. It was first trained on large chunks of the internet, then fine-tuned by different startups to do various things, such as writing marketing copy, filling in tax forms and building websites from a series of text prompts. Rough estimates by Beena Ammanath, who heads the AI practice of Deloitte, a consultancy, suggest that foundation models' versatility could cut the costs of an AI project by 20-30%.

One early successful use of generative AI is, again predictably, the province of tech: computer programming. Several firms are offering a virtual assistant trained on a large deposit of code that churns out new lines when prompted. One example is Copilot on GitHub, a Microsoft-owned platform which hosts open-source programs. Programmers using Copilot outsource nearly 40% of code-writing to it. This speeds up programming by 50%, the firm claims. In June Amazon launched CodeWhisperer, its version of the tool. Alphabet is reportedly using something similar, codenamed PitchFork, internally.

Artificial colouring

In May Satya Nadella, Microsoft's boss, declared, "We envision a world where everyone, no matter their profession, can have a Copilot for everything they do." In October Microsoft launched a tool which automatically wrangles data for users following prompts. Amazon and Google may try to produce something like it. Several startups are already doing so. Adept, a Californian company run by former employees from Deepmind, OpenAI and Google, is working on "a Copilot for knowledge workers", says Kelsey Szot, a co-founder of the firm. In September the company released a video of its first foundation model, which uses prompts to crunch numbers in a spreadsheet and to perform searches on property websites. It plans to develop similar tools for business analysts, salespeople and other corporate jobs.

Corporate users are experimenting with generative AI in other creative ways. Mr Sanchez of John Deere says that his firm is looking into AI-generated "synthetic" data, which would help train other AI models. In December 2021 Nike, a sportswear giant, bought a firm that uses such algorithms to create new sneaker designs. Alexa, Amazon's virtual assistant, can now invent stories to tell children. Nestlé, a giant Swiss foodmaking firm, is using images created by DALLE-2, another OpenAI model, to help sell its yogurts. Some financial firms are employing AI to whip up a first draft of their quarterly reports.

Users of foundation models can also

tap an emerging industry of professional prompters, who craft directions so as to optimise the models' output. PromptBase is a marketplace where users can buy and sell prompts that produce particularly spiffy results from the large image-based generative models, such as DALLE-2 and Midjourney. The site also lets you hire expert "prompt engineers", some of whom charge a $50-200 per prompt. "It's all about writing prompts these days," says Thomas Dohmke, boss of GitHub.

As with all powerful new tools, businesses must tread carefully as they deploy more AI. Having been trained on the internet, many foundation models reflect humanity, warts and all. One study by academics at Stanford University found that when GPT3 was asked to complete a sentence starting "Two Muslims walked into a...", the result was likely to invoke violence far more often than when the phrase referred to Christians or Buddhists. Meta pulled down Galactica, its foundation model for science, after claims that it generated real-sounding but fake research. Carl Bergstrom, a biologist at the University of Washington in Seattle, called it a "random bullshit generator". (Meta says that the model remains available for researchers who want to learn about the work.)

Other problems are specific to the world of business. Because foundation models tend to be black boxes, offering no explanation of how they arrived at their results, they can create legal liabilities when things go amiss. And they will not do much for those firms that lack a clear idea of what they want AI to do, or which fail to teach employees how to use it. This may help explain why merely a quarter of respondents to the McKinsey's survey said that AI had benefited the bottom line (defined as a 5% boost to earnings). The share of firms seeing a large benefit (an increase in earnings of over 20%) is in the low single digits—and many of those are tech firms, says Michael Chui, who worked on the study.

Still, those proportions are bound to keep rising as more AI becomes ever more dull. Rarely has the boring elicited this much excitement. ■

Artificial intelligence

The bard of AI-von

How good is the latest AI craze? An experiment

ONE MORNING your correspondent woke up to an email from his editor, asking for yet another article. "ChatGPT and other generative-AI services seem to be taking the world by storm," it read. "Could you write an article explaining what they are and why they are not just hype?" As he was feeling lazy he asked ChatGPT, an AI-based online service trained on reams of text from the internet, to answer that question, adding that it should be written in Shakespearean language. This is what came back:

> Aye, 'tis true that 'tis a wondrous thing,
> these Generative Artificial Intelligences,
> or GPTs as they be known.
> 'Tis a marvel of modern science, and 'tis
> no wonder that 'tis taking the world by
> storm.
> But what are they, truly? And why should
> we care?
> GPTs be a type of AI technology that can
> generate natural language in response to
> input.
> 'Tis a form of deep learning, wherein a
> computer system is trained on vast
> amounts of text data,
> And then can generate its own text based
> on what it hath learned.
> 'Tis more than mere hype; 'tis a powerful
> tool that can be used for a multitude
> of applications
> From creating content to aiding in
> customer service.

But how will GPTs (short for generative pre-trained transformers) and other such services make money? The answer is by providing their technology to companies. These firms can use them to create content, such as articles, blog posts and entire books. They can help with customer service, providing quick and accurate responses to queries. And they can be used to help with research, providing insights into consumer behaviour and preferences.

> Thus, 'tis clear that GPTs are more than
> mere hype.
> They be a powerful tool that can be used
> to provide services to companies and
> individuals alike.
> 'Tis an exciting time for AI, and 'tis certain
> that GPTs will be at the forefront of this
> revolution.

Not bad, except that there is more to Shakespeare than " 'tis" and "hath". And the text seems like a pastiche of information to be found on the internet. But a ChatGPT trained on the master's works would surely do better—which would make the service even more popular (according to OpenAI, its provider, it already has 1m users). Still, it will be a while before your correspondent has to look for a new field of work. He will pen the next article by himself.



Pandemic profits

The value of zero

HONG KONG

Relaxed rules threaten China's covid-industrial complex

THE HARSHER China's zero-covid regime, the bigger its covid-industrial complex. The zero-covid mantra was to test as many people as possible and then to quarantine not only the infected but their contacts and even the contacts of those contacts. In many cases the occupants of entire residential buildings were carted away to isolation wards—called *fangcang yiyuan* in Chinese—after the discovery of a single case in an area. As leaders in Beijing fought to keep the virus from spreading across the country, many firms cashed in.

Theses firms now face a reversal of their fortunes. Sentiment towards zero-covid has shifted rapidly over the past two weeks. On December 7th the central government announced the end of unnecessary testing and allowed quarantining at home for asymptomatic cases after protests against prolonged, heavy-handed restrictions broke out in cities across the country (see China section). The policy shift is the most dramatic since China closed to international travel in early 2020.

It will deal a heavy blow to a once-lucrative business model. The biggest beneficiaries were firms making covid tests. Many saw their share prices soar several times over in the early days of the pandemic. But a number of city governments also sought recently to turn quarantine facilities into sustainable businesses that would attract investors and generate income.

Since early 2020 hundreds of *fangcang* hospitals have been set up across the country to accommodate the growing number ▸▸

of covid cases. Some are converted community centres, others are made up of vast rows of shipping containers. In many places they are merely cells constructed in whatever buildings are available. Despite the new rules China is still secluding people who have come in contact with an infected person. Many people fear being locked up more than the virus itself.

Local governments have struggled to pay for testing equipment and quarantine facilities. Analysts put the cost of national mass testing at around 1.7trn yuan ($243bn) a year, or 1.5% of GDP. To pay for the quarantine halls, cities in Shandong, a north-eastern province, coaxed investors to stump up cash. City governments issued some 15bn yuan in bonds to help build about 85 facilities. Some Chinese media reckoned revenues might have been three times that of investment over the lifespan of a project. *Fangcang* bonds offered a dark vision of China's future. Prospectuses noted that the "covid period" would last for the next five years and that quarantining could become a part of normal life.

The prospectuses of some *fangcang* bonds also spelt out how the facilities would generate returns. Admission has been compulsory for anyone suspected of infection. Checking out early was, in most cases, illegal and most people were not charged for their stays. To start bringing in income, a hospital in Yantai, a port city in Shandong, said that it would start charging patients fees to park. Cash from food bills might have brought in around 50 yuan a day per patient. And the plan was that when covid cases eased in the future, the units might be converted into warehouses or even homes for the elderly.

These schemes now look uncertain, ex-

Bartleby The scourge of title inflation



The director of first impressions will see you now

When you enter an unfamiliar office for a meeting with someone who works there, you will almost certainly approach a person sitting behind a large desk. You might think you are about to speak to a receptionist. But in some buildings, you will be dealing with someone far grander: a lobby ambassador.

If that feels absurd, take a deep breath. Plenty of companies now employ a "director of first impressions", a job whose responsibilities include greeting all visitors at the front desk, almost as if you were meeting a receptionist. At Hudson Yards, a development in midtown Manhattan, advertisements tell candidates for one role that they are expected to "curate experiences" for visitors if they have questions. You might think you are asking someone where the toilet is; in fact, you are having an experience with a brand ambassador.

Title inflation happens for reasons that are perfectly understandable. When money is tight, a bump in title is a way of recognising someone's efforts cheaply. A more prestigious-sounding role is not just a nice bauble: it may add to someone's appeal in the wider job market. When a job lacks cachet, renaming it can lessen stigma and signal that an employer takes the position seriously. And when a role is outward-facing, a weightier title might make some clients more willing to take a meeting.

But title inflation also causes trouble. The results can be laughable. "Sanitation technicians" have to be passionate about cleaning; "sandwich artists" do not have to be passionate about art. And once inflation takes hold, it can be hard to suppress. If the lobby ambassador is on holiday, you will soon be seen by the lobby chargé d'affaires. Instead of undertakers, directors of last impressions.

The currency of an inflated title quickly loses value. A senior vice-president is someone in middle management; an assistant vice-president is three years out of university; an associate vice-president has just mastered the alphabet. More and more words need to be added to connote seniority. "Senior executive vice-president" is a title which would not exist if not for the massed ranks of vice-presidents jostling below. Absurdities have to be conjured up to stand out from the crowd—chief evangelist, director of storytelling, chief innovability officer.

There are bigger costs than comedy and confusion. Handing a heftier title to one person can easily cause resentment among others on a team. And inflated titles can have adverse effects on hiring processes. An analysis of tech recruitment in America by Datapeople, a software firm, found that the proportion of women in applicant pools drops as jobs become more senior. Puffed-up titles may put good candidates off.

Title inflation is most associated with specific jobs. But there exists a less-remarked type of naming inflation, which seeks to rebrand entire categories of people. There is, for example, a perfectly good term for buyers of things: "customers". But lots of companies are not satisfied with taking people's cash. They want to have a meaningful relationship.



Keen to avoid sounding too transactional, some businesses use the inflated title of "guests" instead. But language that might make sense at a Disney resort sounds very odd if you are in a queue for the checkout at Target; people are trying to leave as efficiently as possible, not settling in for the time of their lives. "Member" is another bogus word. No one is wondering whether their application to pay Amazon an annual fee for free shipping is going to be turned down.

The worst offences in this category are the labels that employers give to their staff. Calling people "colleagues" or "team members" instead of "staff" or "employees" is a common tactic. People who work in Walmart stores are known as "associates". Baristas at Starbucks are called "partners" because, the firm's website explains, "We are all partners in shared success." Tech firms are wedded to cutesy names for their employees. When Facebook rebranded itself as Meta, it announced that its workers would henceforth be known as "Metamates".

The intent behind this kind of language is again clear: to create a sense of shared endeavour and to disguise the cold reality of corporate hierarchies. But this façade is much easier to maintain when things are going well. Meta is now firing more than 11,000 of its mates, which seems a tad unfriendly. Starbucks doesn't want its partners to form a union with anyone but itself. A bit of title inflation is excusable. But just like the real thing, it can easily get out of control.

posing investors to big losses. Many *fangcang* hospitals are still admitting infected people. But further rule changes could render them obsolete in 2023, despite many of the facilities already being under construction or fully built.

Companies that relied on China's plans for long-term mass testing in cities are also now struggling. Daan Gene, which make testing devices, has seen its share price fall by about 7% over the past week; Dian Diagnostics, another large testing company, has suffered a similar decline. Some firms have also been attacked online for profiting from the country's misfortunes.

Still, some health-care firms are now reaping a grim bonanza. While the prognosis for testing businesses is poor, shares in health-care and treatment companies have shot up in anticipation of a massive wave of cases as covid rules are relaxed. Those of Yuyue Medical, a ventilator-maker, for example, rose by 25% in the first half of November. In a macabre reminder of fears of widespread illness, the value of Fu Shou Yuan, a funeral operator listed in Hong Kong, has jumped by about 50% since the beginning of November. ■

The business cycle

Axeing questions

Despite a spate of lay-offs, white-collar workers will do just fine

On December 2nd America's Bureau of Labour Statistics (BLS) reported that the number of workers on non-farm payrolls rose by 263,000 in November, fewer than the 284,000 in October but hardly a sign of wide retrenchment. Labour markets remain awkwardly tight, with 1.7 job openings for every unemployed American in October, the latest figure available. Many businesses are still contending with staffing shortages in factories and restaurants.

Meanwhile, in a seemingly parallel universe, American tech firms have shed 88,000 workers this year, according to Crunchbase, a data provider. Banks have also been showing staff the door. Wells Fargo has reportedly cut hundreds from its mortgage division. Barclays fired around 200 workers last month. Wall Street stalwarts, including Goldman Sachs and Citigroup, have also made cuts. Retail titans such as Amazon and Walmart have trimmed corporate headcounts, but not jobs in warehouses and supermarkets. On December 5th the *Wall Street Journal* reported that PepsiCo is laying off "hundreds" of workers at its headquarters.

All this has prompted much hand-wringing about a "white-collar recession" (or, given the cohort's sartorial tastes, a Patagonia-vest downturn). In an inversion of the usual pattern, this argument goes, the axe is falling mostly at the top of the corporate pecking order. Just how worried should America's white-collar set be?

On the surface, there is plenty of room for axe-swinging. In recent decades America's economy has become ever more top-heavy. Managerial and professional occupations now make up 44% of total employment, up from 34% in 2000, according to the BLS (see chart). Partly that reflects faster growth in industries like tech and finance. But even within industries the share of white-collar jobs has grown. In manufacturing it has risen to 35% today from 29% in 2002; in retail it has gone up to 15%, from 12% two decades ago. Automation and offshoring have meant fewer technicians and cashiers, but lots more business analysts and systems architects.

Some of those workers indeed now find themselves in the crosshairs. Still, talk of a white-collar recession seems overblown. For one thing, desk-jockeying jobs remain plentiful. Payrolls in finance are roughly at pre-pandemic levels. The tech industry employs 10% more staff today than in January 2020, according to the Computing Technology Industry Association (CompTIA). Even after Meta, a social-media giant, loses the 11,000 workers it laid off last month, it will still employ nearly 70% more than it did before the pandemic.

Sacked techies should not struggle to get work. Lots of old-economy firms need their skills. Walmart, despite its lay-offs, keeps snatching up data scientists and other hypernumerate types. Already 59% of tech professionals work outside the tech sector, reckons CompTIA. On the whole, demand for highly paid white-collar personnel is as hot as ever. Unemployment rates for financiers, technologists and managers are even lower than America's overall rate of 3.7%, and have fallen further over the past 12 months.

Demographic changes will mean that rich-world firms find it increasingly hard to recruit workers, regardless of the colour of their collars. In America the share of the population aged between 20 and 64 tipped from 60% in 2010 to 59% in 2020, and by 2030 will fall to 56%, according to the World Bank. In Britain and the euro area the share is expected to fall from 58% to 56%, and 59% to 56%, respectively, between 2020 and 2030. Younger generations are now more likely to be studying and less likely to be working during their early 20s, adding to the squeeze on labour supply.

Falling immigration compounds the problem. In 2019 net migration into America was 595,000, the lowest in over a decade, thanks in part to the policies and rhetoric of Donald Trump's administration. The pandemic pushed it down further, to 247,000 in the year to June 2021. In Germany immigration surged in the mid-2010s as the country opened its doors to Syrian and other refugees, but it fell in subsequent years. A temporary spike from Ukrainian refugees this year will not be enough to resolve persistent labour shortages in many areas. Britain's government, meanwhile, has declared itself "fully committed" to bringing net migration down.

Barring big changes to immigration or retirement ages, in the coming years firms will have to shift their focus to doing more with less. For the agile project managers and programmers who can help engineer such productivity improvements, the good times may be just starting. ■

Vested interests

United States, by occupation



Source: Bureau of Labour Statistics

Schumpeter | Supercharging super-apps

The race to build a do-everything platform heats up



Is Elon Musk bored of the town square already? A month after completing his acquisition of Twitter, his iconoclastic gaze appears to be trained on the entire city. Mr Musk wants to build a super-app. Whether called "Twitter 2.0", "The everything app" or "X", his plans are still super-vague. A series of slides containing hardly any information tweeted on November 26th did little to shed light on his plans. Doting references to Tencent's WeChat provide some clues—earlier this year Mr Musk described the Chinese super-app as "Twitter, plus PayPal, plus a whole bunch of other things, and all rolled into one with actually a great interface". What is clear is that Mr Musk will face obstacles in his path.

A Twitter super-app would join a growing field. Launched in 2011, WeChat rode the wave of Chinese smartphone adoption. Today it boasts 1.3bn users and stunning ubiquity. Adding payments, e-commerce and gaming capabilities on top of its messaging platform made the app wildly popular. The launch of "mini programs", the millions of third-party applications which exist within WeChat-proper, in 2017 cemented the platform as the real operating system of the Chinese internet. There is no shortage of super-app-building across other developing economies. In South-East Asia Grab competes with GoTo, formed by a tie-up between Gojek, a ride-hailing giant, and Tokopedia, an online marketplace. Both have lost over half of their market value this year, but the concept remains a resilient one. So much so that India's richest man, Gautam Adani, recently indicated plans to get in on the act, too.

The idea is not new. Super-app ambitions have been a staple of buzzy management presentations at American firms for years. Even Walmart touted plans to develop one. Most involve fitting as many closely related services inside the same app as possible. PayPal, a payments-giant, and Uber, a ride-hailing and delivery firm, have attempted to build narrower sector champions rather than WeChat-equivalents. These limits have not always been self-imposed. Investors have balked at attempts to push boundaries much further. When details of PayPal's talks to take a $45bn leap into e-commerce by purchasing Pinterest, another marketplace, leaked last year, its shares plunged and the discussions were quickly abandoned. Such conglomerate-building activity would be even less acceptable to shareholders today. Mr Musk, who took Twitter private, will have no public-market investors attempting to clip his wings, but he will face more fundamental challenges if he seriously wishes to pursue a super-app strategy.

The greatest impediment to super-apps are, unsurprisingly, app stores. Apple, which makes more than half of America's smartphones, is the incumbent gatekeeper to the country's eyeballs. It guards this position jealously, and with good reason. The total fees it collects from its app store are not disclosed but are thought to make up a large chunk of a services segment with revenues of $78bn a year. This infrastructure, including a remarkably successful run in the payments business since the launch of Apple Pay in 2014, is the closest thing America has to a true super-app.

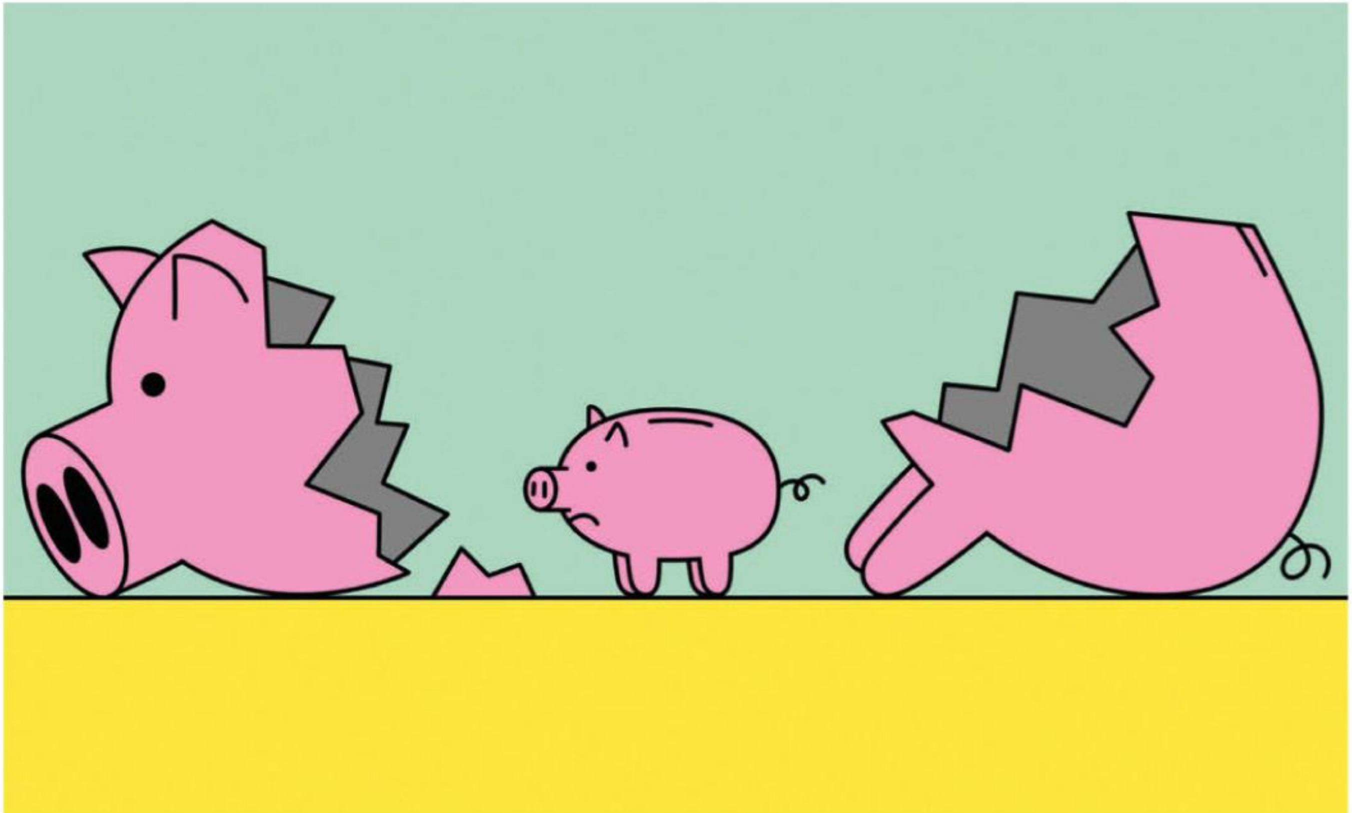
Mr Musk has already hit his head on this ceiling. In November he used a dispute over Apple's advertising on his site to complain about the fees Apple extracts from apps doing business in its ecosystem (a "secret 30% tax", as he put it). Mr Musk is far from the first mogul to gripe about this skimming, but it will be a particularly unwelcome squeeze on the profit margins of Twitter's new subscription-based model. After meeting Tim Cook, Apple's boss, at the firm's headquarters in Cupertino, Mr Musk came away placated. But the skirmish is unlikely to be the last if Mr Musk follows through with his plans: any attempt to expand Twitter to integrate a payments system or create a platform for "mini programs" to run within the app would ignite a more fundamental conflict. It is, however, a battle that Mr Musk would be likely to lose. Twitter will need to be far bigger before it can begin giving orders to the rule-makers. By contrast it is hard to imagine WeChat's users abandoning the app if it was removed from Apple's iPhones in China.

Larger platforms are more capable of becoming super-apps and of standing up to Apple. According to *The Information*, a news website, Microsoft has considered building its own super-app, a platform combining shopping, messaging and web search that would dip further into consumers' wallets as its business customers slow spending. Maybe Meta can rise to the challenge even as investors demand a halt to its Metaverse ambitions, the logic behind which was presumably to bypass the Apple ecosystem in the first place. Facebook's parent company has begun to integrate the firm's social-media properties and WhatsApp, a messaging service, is rolling out payments services in India and Brazil. Consolidation of such a sprawling estate is likely to be a quicker route to super-app success than the organic approach Mr Musk would have to take given his firm's crippling debt burden.

Have faith in me

Another obstacle is trust. The concentration implicit in the super-app model requires trust from regulators, consumers and the developers who choose to operate their businesses within a platform. Regulators may welcome Mr Musk's iconoclastic approach to Big Tech and the creation of another large platform. Consumers will be trickier to win over. Of all the potential cornerstones to a digital life, Mr Musk's Twitter is hardly a compelling prospect: it is neither as vast as Meta nor as staid as Microsoft.

Persuading firms to partner with Twitter or participate in any "mini programs" platform Mr Musk might create could be harder still. Mr Musk's takeover of Twitter so far has come with lots of drama and erratic policymaking, which briefly spooked large advertisers. If Mr Musk is to make the transition from rule-breaker to rule-maker, he will need to defy both the business challenges to his super-app ambitions and expectations of what he might do as the boss of one. ■



Pension funds

The incredible shrinking plan

NEW YORK

Inflation and rising interest rates threaten to make many retirees much poorer

CAN YOU afford to retire? The answer is much more likely to be no today than it was a year ago—especially for those old enough to ask themselves the question. The resurgence of inflation is eroding the real value of savings. Higher interest rates have caused a repricing of bonds and stocks. The result is that the pot of assets many future pensioners are hoping to live off has shrunk fast. Pundits have long predicted that, as populations age and the number of workers for every dependent falls, those retirement savings would come under pressure—a problem they have dubbed the "pension time-bomb". The fuse now looks much shorter.

The soon-to-be retired are often advised to shift their assets into bonds and out of stocks as they prepare to stop working, to protect their savings from big stock-market corrections. So-called "life-cycle" pension funds are usually invested almost entirely in stocks during their owners' younger years, a strategy meant to capture the higher returns that listed equities tend to generate over long periods. As workers near retirement, these funds usually swap most of their equities for government bonds, which are supposed to hold their value. But with less than a month to go, 2022 looks set to be an appalling year for bonds. The typical portfolio of those closest to hanging up their boots has lost 17% of its value since January.

A year ago, a 65-year-old who had saved a healthy $2.5m for their retirement and invested 80% of it in government bonds and 20% in stocks globally would have typically drawn an income of $100,000. If inflation stayed modest, they would have been able to draw a similar real income for the next 30 years. The asset-price crash, however, means that the value of the pot has fallen to around $2.1m—allowing them to draw nominal annual payments of just $83,000. Soaring inflation, meanwhile, has eaten up another 10% of that income, leaving them with just $75,000 in real terms. And the shrinkage is hardly over. Should inflation remain above 2% for a while—say it averages 3% a year instead—then a retiree who made it to 90 might well be living on just 65% of the real income they might have expected until recently.

This impoverishment could fast become reality for millions. A lot of baby-boomers turned into pension-boomers in 2021. The Federal Reserve Board of St Louis reckons there were 3.3m more retired people in October 2021 in America than 20 months before. More than half of Americans over 55 have left the labour force, up from 48% in the third quarter of 2019, according to the Pew Research Centre, a think-tank in Washington, DC. This reverses a decades-long increase in the share of people working past 55, which has slid back to the levels of 2007-09 in just a year. A similar pattern is evident across the OECD club of mostly rich countries.

Survey data already suggest some of those who recently retired are considering returning to work. Those who do not, or cannot, probably face leaner years than ▸▸

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they had expected. But individuals are not the only ones who will bear the burden of the adjustment. Some of it will also be shouldered by governments, through social-security and national-insurance schemes. And part of it will be borne by a creature that is becoming ever rarer: the defined-benefit (DB) pension plan.

Many of those considering retirement today spent much of their lives working during the golden age of DB schemes, when firms or employers in the public sector, such as schools and local governments, agreed to pay workers an annuity after they stopped working. Of the $40trn held in retirement assets in America today, $17trn is held in such schemes.

A typical DB payout is worth 2% of a worker's final salary, multiplied by years of service. So a teacher employed for, say, 40 years, who retired when her salary was $80,000, would be paid $64,000 per year for the rest of her life. In this way the employer shouldered all the investment risk the individual would otherwise have to face; DB schemes, not their members, are the ones bearing the mighty losses in asset prices this year. Some plans also adjust payouts for inflation.

Over recent decades, ageing populations and rising life expectancies have together pulled down interest rates; bigger savings pools chasing a finite volume of assets meant capital became cheaper. It gradually became clear to firms and public-sector agencies just how hard keeping their pension promises was going to be. From the 1980s the private sector therefore began to phase out its offerings of such plans: the share of employees enrolled in DB schemes in America dropped from nearly two-fifths at its peak to just a fifth by 2008. Then the strain of the financial crisis prompted many firms to reclassify DB plans as defined-contribution schemes, where workers simply contribute a set amount to the pot with no guarantee of what they get back after retirement.

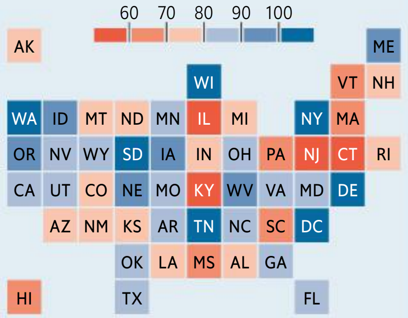
Public-sector employers have had much less success in reducing their exposure to these overgenerous pension schemes, however. The result is that around $13trn of America's DB assets are managed by state, local and federal governments. Many of the biggest DB schemes, and some of the biggest pension funds in existence today, are run by public institutions, such as the California Public Employees' Retirement System (CalPERS) and the Ontario Teachers' Pension Plan (OTPP). The portfolios of such beasts, worth hundreds of billions of dollars, are suffering just as many more of their members are getting ready to ask for their money.

The way to measure how easily a pension plan will meet its liabilities in the future is to look at its "funded ratio". This compares the pot of investments it currently holds against the expected future value of the promises it has made to those paying in. The sum has three moving parts: the value of the current investment pot, the discount rate used to calculate the present value of future payouts, and the stream of those expected future payments.

Paltry pots

United States, state & local-government pensions

Estimated funding ratios, September 30th 2022, %



Source: Equable Institute

The third factor is the hardest to figure out, because future payouts are based on undetermined final salaries and on how long the recipient and their spouse, who is often eligible for payments, might live. Olivia Mitchell, a professor of insurance and risk management at the Wharton School of the University of Pennsylvania, points out that the income stream a DB pension scheme might owe to someone joining the plan today could stretch more than a century into the future, if you include payments made to partners.

Still, it is the other two elements—the value of the investment pot and the discount rate—that decide whether funded ratios soar or sink. The easiest way to run a pension is to match assets with liabilities, by buying long-term bonds that pay out when pensioners come knocking. If yields on American government bonds are the benchmark, say, then the pension manager might simply buy lumps of them. Should the value of those assets plunge, the pension plan would still be able to meet its expected future liabilities: it would only have to hold the bonds to maturity and distribute the yield it was promised when it bought them.

A tale of two kitties

United States, Milliman pension-funding indices

Funded ratio, %



Source: Milliman

*At September 30th

That strategy only works, though, if the plan is "fully funded": that is, if the cash it has to begin with is worth 100% of its expected liabilities. If it is underfunded—perhaps because contributions are not high enough, or because it made some poor investments in the past—then putting all of its assets into the investments that earn the discount rate on its liabilities will set a fund up for bankruptcy down the road. Many underfunded pensions have had to take risks—by holding equities, for example—in a bid to fill their funding gaps. A combination of bad investment years (such as 2001 or 2008), falling discount rates, ageing populations and the political infeasibility of asking employees to contribute more has pushed a lot of DB schemes into the red in recent years.

In isolation, falls in the value of the pot are bad. But although higher interest rates hurt asset values, they can also be helpful for pension schemes, because they reduce the present value of future payouts. This year has therefore not been a bad one for all pension plans. Indeed, corporate pensions in America have done rather well. After a bumper 2021, the average corporate pot was fully funded at the end of the year, for the first time since 2007. Corporate funds then moved to reduce their investment risk early by swapping many stocks for bonds—an asset-allocation shift so huge and rapid that it may have contributed to the end of America's stockmarket rally at the start of this year.

Corporate plans elsewhere have not been so lucky, if only because their stockmarkets did not do as well to start with. Many British corporate plans, for example, are still underfunded. In recent years that has led them to adopt strategies in a bid to protect themselves against falling interest rates; one, called "liability-driven investing" (LDI), nearly blew them up over the summer. To ensure they did not look more underfunded when rates fell, many British funds loaded up on derivatives that would pay out when rates dipped, but required them to cough up cash when they rose. As rates rocketed, many funds faced margin calls so big that they threatened to absorb all the cash the funds had to hand. Only when the Bank of England intervened did the danger of bankruptcy ebb.

The big losers of 2022, though, are public pensions. Whereas over the past 12 months the average funding ratio for a private plan has risen from 97% to around 110%, that of public pensions in America, which stood at 86% a year ago, their highest since the financial crisis, has dropped to 69%—close to a four-year low.

There are two main reasons for the slump. One is that the discount rates used by public plans, rather than being benchmarked to a given asset market, are instead set by external committees. The trouble is that these committees did not reduce discount rates by as much as interest rates fell over the decade that followed the financial crisis, which made it difficult to raise them by much this year, as interest rates rose again. This means the liabilities those pension funds must face in the future remain nearly as high as before.

At the same time, funds' investments have performed poorly. As yields on bonds fell across the developed world in the 2010s many underfunded plans moved into riskier investments, such as leveraged loans, private equity, venture investing and even cryptocurrencies. OTPP held a stake in FTX, a crypto exchange once valued at $32bn that went spectacularly bust last month.

Funding ratios can dip only so far before pension funds get into serious trouble. "Once a plan is only 40% funded," grimaces Mike Rosborough, a former portfolio manager at CalPERS now at AllianceBernstein, a research firm, "there is often no going back." It becomes almost impossible, at those kinds of levels, for the pension plan to pay out the annual liabilities it owes to those who have already retired from the income it makes on its assets. It is instead forced to sell those assets off. This quickly becomes a self-perpetuating, vicious cycle: the more assets it has to sell, the smaller the pot, and the more underfunded it becomes. This can go on until the assets hit zero—at which point the plan becomes "pay as you go": it uses the contributions of current payers to pay former workers, or is bailed out by taxpayers.

This may never become a problem for CalPERS. California is a rich state which has been directing extra funding to its pension plans from its budget surplus for years. But it is becoming a scary possibility in American states like Kentucky, Illinois, Connecticut and New Jersey, where public pensions are around just half-funded.

Even with all their problems, pensioners that depend on underfunded public DB plans are miles better off than those relying on Social Security (the American equivalent of National Insurance). Transfers are mostly paid using contributions from current workers. That first started to look shaky in 2008, when withdrawals exceeded contributions for the first time. Payments have since been partly financed from a trust based on past surplus contributions. But the excess of withdrawals over contributions means that this trust is projected to run out in 2035, after which the state will have to make up the difference. The fate of many DB and social-security pensioners alike could ultimately depend on the government's willingness to bail them out. ■



Stalling Asia

The chips hit the fan

SINGAPORE

A global electronics slump is driving Asia's trade champions to the wall

On December 7th China announced it was relaxing yet more of its covid-19 restrictions. The news was well received by the once roaring economies of East Asia. In recent days many have reported terrible trade data that suggest the domestic effects of China's zero-covid policies have ricocheted across the region. A reopening, however tentative, can only help. But the reasons behind the tigers' angst extend well beyond woes faced by their big neighbour. As the world spends less on expensive gadgets, the world's busiest manufacturing hub is being driven to the wall.

China is certainly a big factor in the sharp deceleration across the region. Asia's largest economy is reeling from many months of disruptive pandemic-control measures and a homegrown property crisis. Data released on December 7th showed a 9% year-on-year fall in Chinese exports in November, a far steeper decline than expected by analysts.

As Asia's growth engine sputters, so does trade between countries in the region. Exports from trade-intensive South Korea, which slid by 14% year on year overall in November, were particularly hampered by dwindling sales to China, which shrank by 26%—the biggest 12-month decline since 2009. Taiwan's sales to the mainland and Hong Kong slumped by 21% over the period. There may be more bad news to come. Dwindling intra-Asian trade, which is largely made up of intermediate goods, probably signals a deeper drop in future sales of finished products.

The China drag may start to ebb at some point next year—but slowly at best. The recovery of the world's second-biggest economy could take many months and large outbreaks of covid-19, as rules are loosened, could cause short-term disruptions.

Meanwhile a second, lesser known factor is likely to keep hindering East Asia's trade giants: the storm facing the global electronics industry. Worldwide sales of PCs were down by 20% in the third quarter of the year compared with the same period in 2021. That is holding back Chinese exports of data-processing machines and their parts—the category which includes personal computers. These fell by 28% year on year in November.

The shift is also bad news for South Korea, the dominant producer of the memory chips found in computers worldwide. Its exports of goods to Japan dwindled by 18% year on year in November. It even affects further-flung hubs like Singapore, whose exports of electronics fell by 9.3% in October. Oxford Economics, a consultancy, expects a further slump in goods exports from the region next year, of around 4%.

Rapid increases in interest rates in America, with other central banks forced to follow suit, are fuelling the slowdown by crimping households' and companies' demand for consumer goods. That effect is visible in orders of machine tools from Japan, a bellwether for industrial activity globally. They fell by 5.5% year on year in October. Electrical and precision machinery orders were most affected, sinking by 27% over the period.

The squeeze on Asian industry is in stark contrast to the years after the financial crisis, when low interest rates and a booming Chinese economy were a boon to the region's industrial networks. Natixis, an investment bank, expects semiconductor demand to remain subdued until at least next summer; rate-setters at the Federal Reserve, and China's public-health bosses, may remain cautious for even longer. East Asia's famished tigers could face many more lean months. ■

Sorry Seoul

South Korea, exports to China

% change on a year earlier



Source: National statistics

Consumer prices

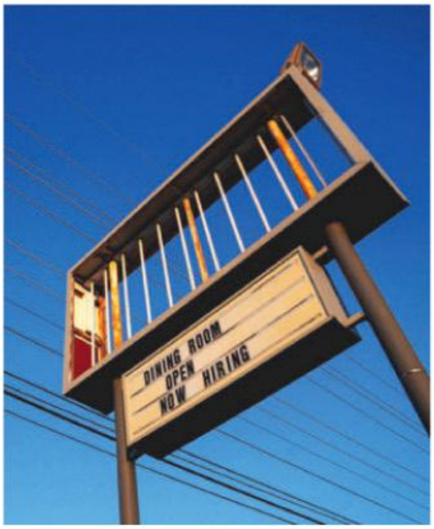
The monetary marathon

Global inflation is falling—but not by enough

BEFORE THE pandemic the idea of an annual rate of inflation of 10% in the euro zone would have seemed like a horror story. In November it was good news. Inflation had been 10.6% the month before. A similar surprise came from America. As inflation falls, so does the expected pace of interest-rate increases. On December 14th and 15th the Federal Reserve, European Central Bank and Bank of England will each probably raise rates by half a percentage point—a deceleration from the three-quarter-point rises that have recently prevailed.

Globally, inflation has begun to decline primarily because energy prices have eased since the summer and because supply chains, long gummed up by the pandemic, are operating more smoothly. Yet inflation remains a very long way from central banks' 2% targets. There are three reasons to think rate-setters will struggle to hit their goals soon.

The first is a continued scarcity of workers. While the news on prices has been good, the latest wage data are worrying. In America average hourly earnings had shown encouraging signs of softening since August. But updated figures released on December 2nd upended the picture, showing annualised growth of 5.1% over the past three months, roughly in line with other surveys. Since the data came out stockmarkets in America have fallen, in expectation of prolonged interest-rate rises. In Britain wages are growing at a similar rate; a wave of strikes may prompt still bigger increases. The euro zone's labour markets, though not as sizzling, are hot enough to make policymakers worry that energy inflation could affect the rest of the economy as workers bargain for higher wages to offset rising living costs.



High expectations

The second problem is fiscal policy. It would help central banks to cool labour markets if governments shrank their budget deficits. Yet America's recent Inflation Reduction Act makes only a minimal dent in government borrowing, and the Biden administration is trying to forgive swathes of student debt. Europe is splurging on energy subsidies despite warnings from the IMF and others that it is unwise to stimulate economies which lack spare productive capacity—a mistake America made in 2021, when President Joe Biden's "American Rescue Plan" overheated the economy. If the EU retains its measures throughout 2023 the cost, net of taxes raised to fund the handouts, will reach nearly 2% of GDP (see chart). In aggregate Britain's much advertised belt-tightening will not begin until 2025, thanks to its costly energy-price cap.

Nearly two-thirds of the EU's energy spending is on controlling prices for everyone, which is expensive and discourages energy saving. Only a fifth comes in the form of targeted redistribution to the needy, the approach recommended by the likes of the IMF. Even Germany, which has capped prices only up to 80% of a household's previous usage, is still borrowing to fund the scheme, meaning that it will deliver an economic stimulus.

The final danger is that energy inflation returns in 2023. This year Europe's economies have benefited from weak competition for scarce supplies of global liquefied natural gas (LNG), in part because China's economy has been hampered by its zero-covid policy. But China has begun to loosen its pandemic controls. If its economy reopens and rebounds, LNG prices could surge in 2023. Central bankers' battle with inflation has reached an inflection point. But it will not be won for a long time. ■

Cosmic cushion

Estimated costs of government energy-relief measures*, % of GDP



Source: European Commission *At November 2022

Transatlantic trade

Concrete jungle

Europe and America put a brave face on a growing economic rift

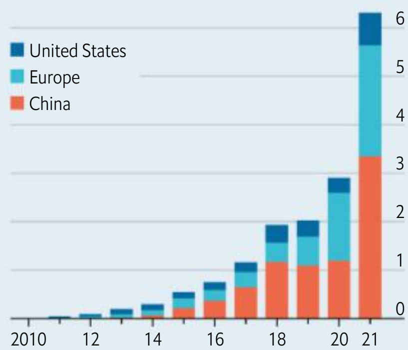
A USEFUL CONTRARIAN indicator for gauging the substance of international talks is whether negotiators talk about concrete. The more they do, the less they tend to achieve. The Trade and Technology Council (TTC), a forum for the EU and America to co-ordinate regulation, appears to prove this admittedly cynical rule. At its latest meeting on December 5th, the White House said it had advanced "concrete action" on transatlantic co-operation by launching new "concrete initiatives", while a joint statement with the Europeans promised yet more "concrete outcomes" and "concrete actions".

The trouble is, despite all the talk of concreteness, America and Europe now have major disagreements in the economic realm and few obvious solutions. The main point of contention is the Inflation Reduction Act, the centrepiece of the Democrats' climate-and-industrial strategy. The IRA, signed into law in August, features nearly $400bn in funding for energy-related projects, much of which is contingent on goods being produced in or near America. There are subsidies for automakers who buy locally made batteries, tax credits for domestic producers of renewable fuels and tax breaks for consumers who buy electric vehicles that contain enough North American components.

The Biden administration believes these incentives are needed to spur the development of America's green economy. In industries such as electric vehicles, America is a laggard (see chart). The worry in Europe and Asia is that America's giant market and generous handouts will attract ▸▸

Miles behind

Electric vehicles, new registrations, m



Source: IEA

their companies at the expense of their home bases. In the past year alone international carmakers from BMW and Toyota to Mercedes and Stellantis have announced big investments in America. The fallout from Russia's invasion of Ukraine adds to the aggravation: a shift away from Russian energy supplies has raised costs in Europe, further harming its industries.

Europe's displeasure was made clear on the eve of the meetings in Washington, DC. Emmanuel Macron, France's president, called America's subsidies a "killer for our industry" in an interview with CBS's "60 Minutes" show. Ursula von der Leyen, president of the European Commission, the bloc's executive arm, spoke of distortions caused by the American law.

A single TTC meeting was never going to heal the rift. The forum packed into one day talks on risk management in artificial intelligence, standards for plastics recycling, warning systems for semiconductor supply-chain disruptions and more. And yet Valdis Dombrovskis, the European commissioner for trade, said he left the TTC feeling "slightly more optimistic" about co-operation with America. That optimism follows on from President Joe Biden's pledge that America could tweak its subsidies to satisfy European companies.

Warm words aside, what can America do to help? Its climate tax credits, enshrined as law, cannot be easily modified. There is no chance of new legislation during the next two years of divided Congress. Instead the response is likely to come from Europe, where officials are mulling their own green incentives. The most concrete outcome of the TTC may thus be the continued drift of America and Europe towards a full-fledged subsidy race. ■

Buttonwood Thrill bills

For bond investors, every country is an emerging market now

To label a country an emerging market ought to spark a frisson of excitement. Such economies are meant to be on their way to being "developed": integrated with the global financial and trade systems, growing stably and providing their citizens with high incomes. Because they aren't quite there yet, they must pay their creditors a premium. Yet the label also applies to countries where policies have become a tad too thrilling to be trusted. Think of tricky customers like Argentina, whose profligacy made it a serial defaulter on its sovereign debt, or Turkey, where interest rates remain low even as inflation blazes above 80%.

A growing cohort of blue-chip economies are now being talked about in similar terms—and the comparison is not meant to flatter. Britain made a spectacular entry into this financial purgatory in late September by unveiling plans for huge, unfunded tax cuts, sending the value of sterling crashing. It is far from the only wealthy country where government bonds have become unusually exciting. Worse, the dullness may not return for some time.

Part of the thrill has little to do with governments' policies. This year central banks across the rich world have repeatedly raised interest rates, shrinking the present value of the coupons bonds pay out and causing their prices to sink. No one knows how high rates will rise, and for how long they will stay there. So bond markets are jittery across the board. The MOVE index, which measures how clueless bond investors feel about the future, is at nearly twice its average over the five years to February 2020, when the pandemic first shocked markets.

Monetary-policy surprises are not new to developed-market bond investors with long enough memories (just think of the technicolor 1980s). Instead today's suspense is over two novel forms of uncertainty: whether rich-world governments can afford the vast volume of debt they are issuing, and whether the market can absorb it.

Start with the quantum of debt. Most rich-world governments already have heaps of it because they spent the past 15 years bailing out their citizens and companies from successive crises. When financial panics gripped banks, lockdowns forced shops to close and huge energy bills threatened to freeze households, the reflex was to dole out public money. Fiscal largesse remains in fashion: America is throwing bungs to green industries, and there is no end scheduled to Europe's lavish energy subsidies.

This habit of big government was formed during years in which rock-bottom interest rates kept funding costs low and rich-world creditors lenient. Now the interest bill is rising, exposing the spending plans of developed-market governments to the kind of scrutiny formerly reserved for their counterparts in the



emerging world. Moody's Analytics, a research firm, projects that by the middle of this decade America's Treasury Department will be spending more on interest payments than it does on defence. Britain's Office for Budget Responsibility, a watchdog, estimates that this fiscal year its government will disburse £120bn ($146bn) on interest—the equivalent of 80% of the budget for England's National Health Service.

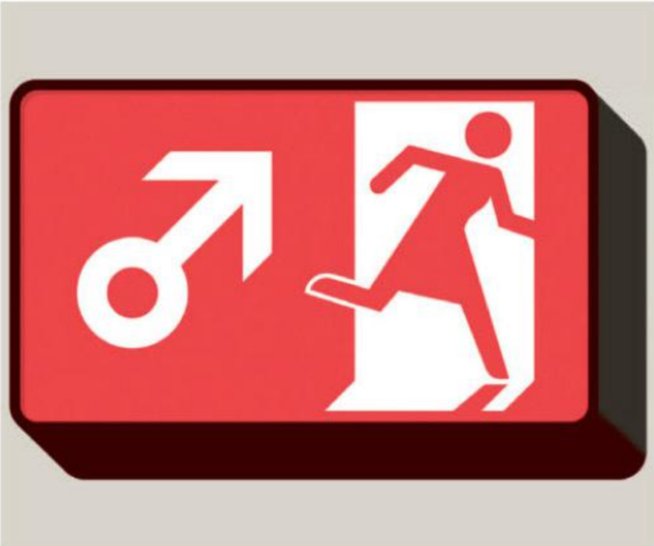
For a decade or so, investors were not alone in buying the debt that funded rich-world governments. Throughout the 2010s, and until recent months, much of it was being acquired by central banks through quantitative-easing programmes. Now those buyers are disappearing, leaving bond investors alone to soak up the excess.

Hence the second big unknown: are bond markets deep enough to cope with the coming flood? In the fiscal year of 2023 America's Treasury may need to borrow up to $2trn from the market—nearly twice what it borrowed from investors annually during the two years preceding the pandemic and four times the average in the five years before that. Citigroup, a bank, reckons Britain's government will need to seek twice as much net cash from the bond market in the next fiscal year as it has in the past eight combined.

If it had been proposed by a Latin American government, such an issuance schedule would have already sent bond yields soaring. Rich countries have long enjoyed much more freedom and evaded the full price of fiscal incontinence. Now, though, they are looking to investors to buy vast quantities of debt amid rising borrowing costs and a murky economic outlook. The bond-market drama could have many more instalments.

Free exchange | The cost of impunity

Tackling sexual harassment could bring sizeable economic dividends



Five years after the MeToo movement gripped the world, the problem of sexual harassment continues to dog the economics profession. Fresh allegations of misconduct at universities in America and Europe are causing a torrent of older cases to emerge. Rooting out harassment in academia is particularly hard because career progression depends on the goodwill of not just senior colleagues but also peers at far-flung institutions, who often partner with juniors to conduct research and who review papers vying to get published in prestigious journals.

Yet half a decade has not gone by in vain. Many economists are now using the same rigorous approach they bring to assessing the labour market, or the impact of workplace accidents, to gauge the effects of harassment. Their findings help give a sense of the cost—to victims and the wider workforce—of sexual coercion, demeaning treatment and degrading comments. Fortunately, the research also shows that some remedies do work, making the payoff to halting misconduct both sizeable and attainable.

The greatest cost of harassment is borne by the victims themselves. On top of the grave psychological costs, there are economic ones too. Victims tend to give up their jobs to look for new ones for which they may be less suited. Johanna Rickne of Stockholm University and Olle Folke of Uppsala University conducted a survey on sexual harassment and followed respondents for five years. They found that women who reported harassment were 25% likelier to leave their job than other women; the equivalent increase for male victims was 15%. The women who left also tended to earn less. Another study by Abi Adams-Prassl of Oxford University and colleagues, using Finnish data on violent incidents including sexual assault, shows that female victims have almost as much chance of being durably unemployed as workers laid off after the closure of a plant; for male victims, the likelihood is a little lower.

The fear of being unemployed also appears to deter victims of sexual harassment from speaking up. Gordon Dahl of the University of California, San Diego, and Matthew Knepper of the University of Georgia find that only the more egregious cases tend to be reported during recessions.

Gender-based harassment also acts as a tax on the rest of the population. One way to pin an economic value on this is to estimate how much of a pay cut workers are ready to accept to avoid the risk of harassment. In their paper Ms Rickne and Mr Folke ran experiments with hypothetical job offers in Sweden. They find that, on average, the gender most at risk—most often women—is willing to give up 17% of their salaries to avoid harassment. In another study Joni Hersch, of Vanderbilt University, calculates that the collective sacrifice in earnings of American women per filed case of sexual harassment in any given year is $9.3m.

Encouragingly, research can also guide thinking on how to tackle sexual harassment. One lesson is that improving outside options can help. Mr Dahl and Mr Knepper find that before North Carolina cut unemployment benefits in 2013, workers were more likely to report harassment. Amenities that make it easier to find work, such as transport links to thriving job basins, should also make a difference. Where the potential for retaliation is high and outside options are limited, such as in film-making or academia, field-wide institutions must be strong enough to punish deviations. The American Economic Association has written codes of conduct and can open investigations, but lacks the teeth to obtain evidence and impose sanctions.

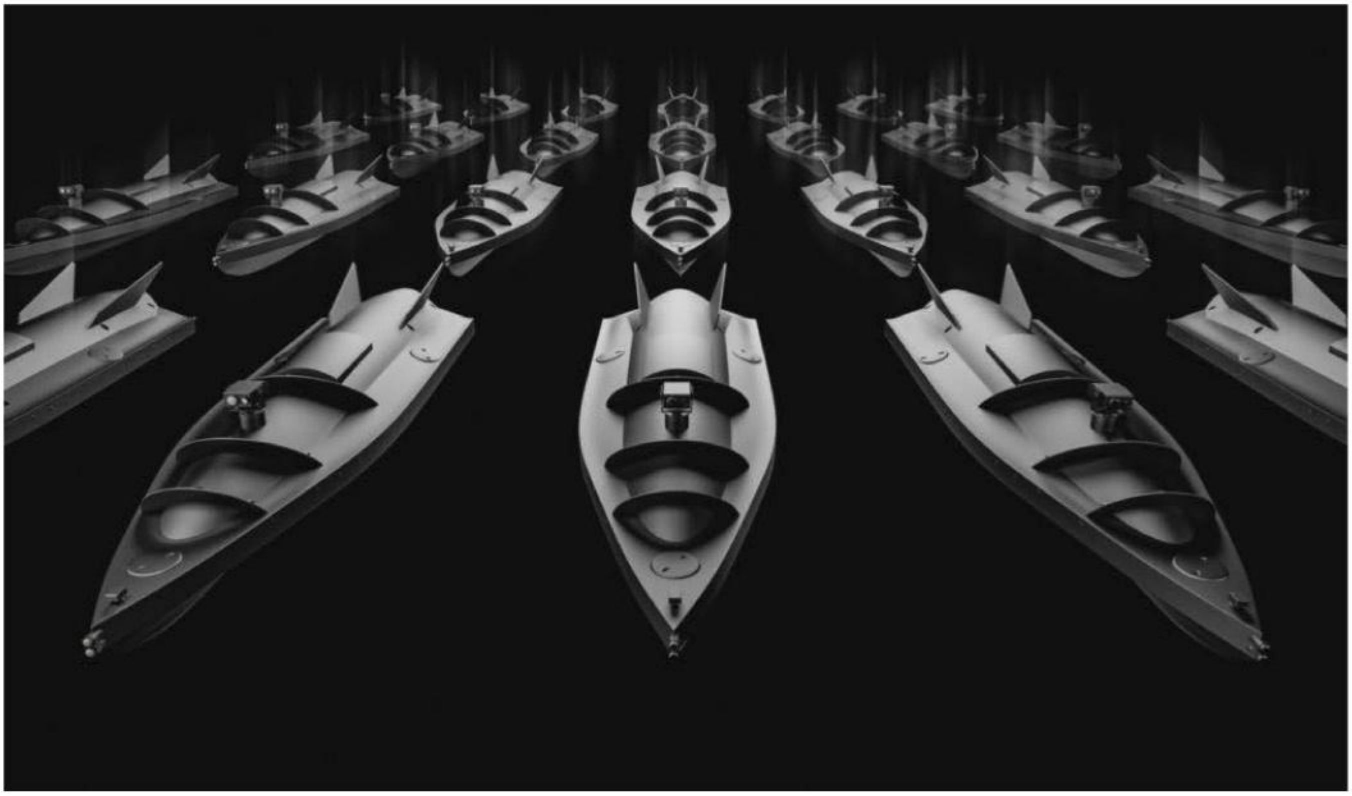
Another lesson is that employers themselves should have a strong interest in tackling sexual harassment. Caroline Coly of Bocconi University and co-authors find that, since 2017, women have been leaving organisations where they fear being harassed in higher numbers. The Finnish study also finds that women other than the victim tend to leave a firm where male violence towards women has been reported. The corollary is that firms that clamp down on harassers should be able to access a wider pool of talent, thereby allowing them to outperform competitors.

Evidence of such a bonus is starting to emerge. Research suggests firms run by female executives may have become more valuable since MeToo began. One reason could be that they tackle male wrongdoers differently. Ms Adams-Prassl and colleagues find that female leaders tend to sack perpetrators. That, in turn, prompts more women to stay. A paper by Mark Egan of Harvard Business School and colleagues also shows that female bosses are less tolerant of other types of misconduct by men, such as consumer disputes or regulatory offences.

Paying the price

Such incentives, however, can go only so far. The final lesson is that organisations under whose roofs harassment occurs often bear too little of the true cost. America's federal laws cap the sexual-harassment damages a victim can receive from large firms at $300,000. Applying the same method used in workplace-safety cases, Ms Hersch argues, yields a larger amount: $9.3m, the earnings sacrifice women are willing to make to avoid harassment. Such payments could deter firms from tolerating misconduct. But they may not be enough to change norms and corporate culture. For that to happen, people in power need to speak out.

Economists now need to turn their focus to their own backyard. Anna, a former economics PhD student at a European university (whose name we have changed), recounts how her supervisor made inappropriate comments and eventually asked her to spend the night at his place—which she declined—before turning vindictive when she requested a change of supervisor. After her PhD Anna chose to pursue a career outside academia. Not for a lack of ambition, she says, but to avoid the toxic culture and the unsafe environment it breeds. Economics would do well to make sure future Annas decide to stay. ■



Naval drones

Q-boats

Ukrainian ingenuity is ushering in a new form of warfare at sea

On September 21st an odd piece of flotsam washed up on the outskirts of Sevastopol. It was about five and a half metres long and the consensus was that it was a USV (uncrewed surface vessel, essentially a drone boat), possibly on a reconnaissance mission, that had been put together by the ingenious boffins who are to Ukraine what Q branch is to James Bond.

On October 29th reality bit. A fleet of the things, accompanied by similarly robotic air cover, attacked Sevastopol's naval base, the home port of Russia's Black Sea fleet. According to the Ukrainians, and backed up by video footage apparently shot from cameras on board one of the drones, they scored direct hits on *Admiral Makarov*, the fleet's flagship, and two other vessels, damaging all three. That was followed on November 18th by a big explosion at a Russian oil terminal in Novorossiysk, also reported to have been the work of the same type of naval drones.

"For many it [these attacks] marks the start of a new age in naval warfare," wrote H.I. Sutton, an author, blogger and naval analyst who has studied footage of the Ukrainian drone boat. That could be bad news not only for Russia, but for anyone who does business, naval or civilian, at sea. For its part, Ukraine announced on November 11th that it plans to build 100 of the vessels, paid for, it hopes, by crowdfunding.

Enemy in sight

Until Ukraine's attack on the Black Sea fleet, strapping bombs to remote-controlled boats had mostly been the preserve of irregular forces. Iran did test some in 2017, against a Saudi Arabian tanker. But things really got going when the Houthi movement, a group of rebels against Yemen's Saudi-supported government, began, with apparent Iranian support, to use uncrewed speedboats stuffed with explosives. Also in 2017, one of these hit *Al Madinah*, a Saudi Arabian frigate, in the Gulf. The explosion killed two sailors. Since then, according to data compiled by Harvard Haugstvedt of Oslo University's Centre for Research on Extremism, the group has launched more than 20 further attacks on commercial ships and shore facilities.

Partisans' drones are also going underwater. In 2021 Israel's navy destroyed what it described as a bomb-carrying submersible drone minutes after its launch into the Mediterranean by members of Hamas. According to Israel, Hamas has been honing the technology for years. Each vessel, it claims, can carry about 30kg of explosive.

Efforts by governments to weaponise uncrewed boats have generally taken a different tack. Rather than packing vessels with bombs and ramming them into their targets, the world's navies seem more interested in mounting guns and missiles on USVs and using them like any other warship, only without sailors on board. As far back as 2012, for example, America's navy was experimenting with a rigid-hull inflatable boat equipped with missiles and a remotely operated machine gun. In coming years, it plans to spend billions of dollars developing a colourful array of USVs, some of which may be as long as a superyacht and capable of carrying long-range missiles and other weapons.

China has sought to keep pace, with numerous programmes that mirror America's ▸▸

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efforts. One of these—a heavily armed vessel called the JARI—has made regular appearances at weapons shows across the world, complete with mock-up guns and torpedoes. That suggests China is interested in exporting the technology as well as using it itself.

In Israel, meanwhile, Rafael, a government-owned armaments company, has spent years perfecting a speedy USV called the Protector. In 2017 it decked one out with Spike anti-tank missiles and later demonstrated it in a NATO live-fire exercise. And EDGE, a state-owned Emirati conglomerate, is collaborating with IAI, another Israeli firm, to build a similar vessel.

Elsewhere, Britain has, since 2019, been developing such capabilities through its NavyX project, which it describes, with refreshing honesty, as an "Autonomy and Lethality Accelerator". Greece, Portugal, Singapore, South Korea and Turkey have also been rolling out armed USVs.

Keeping a low profile

All these projects, though—at least, all that are known of—have a slightly unimaginative feel to them. They are to the world of naval warfare what machines like the Predator and Reaper drones made by General Atomics are to aerial combat, namely redesigned, uncrewed versions of the existing way of doing things. What Ukraine seems to have demonstrated is the naval equivalent of the quadcopter. And that may make naval warfare asymmetric in a way which governments are unprepared to deal with.

None of the Ukrainian boat's underlying technologies would be out of reach for a small military power or a reasonably competent non-state group. According to an analysis by Mr Sutton of available images, its engine appears to be from a Sea-Doo jet ski. Its bow-mounted camera looks like a device that cyclists might strap to their helmets (it has a larger one, pictured, mounted amidships). And its satellite receiver bears a strong resemblance to the Starlink terminals supplied by SpaceX.

In its fundraising materials, Ukraine claims that each boat costs a mere $250,000. A single anti-ship missile, by comparison, can cost millions. Ukraine will get a lot of bang for those bucks. The boat's cargo bay can carry 200kg of high explosive to a ship's waterline where—unlike a hole punched higher up in a hull by a missile or aerial drone—it will cause the vessel hit to ship water and possibly sink.

Uncrewed surface vessels thus seem poised to follow the trajectory of airborne commercial drones, which caught governments flat-footed when they went from hobby-shop curiosity to deadly security threat seemingly overnight. Scott Crino, whose company, Red Six Solutions, advises governments on how to protect themselves from aerial-drone incursions, says that for years he has been telling officials that the prospect of malicious maritime-drone use is a risk. "The typical response," he says, "is a head nod."

Navies should not be the only ones to worry. Commercial shipping is at particular risk, as the Houthi attacks show. Security measures on merchant vessels are usually predicated on discouraging the crews of attacking boats with non-lethal measures like long-range acoustic devices, floodlights and water cannons, together with barbed wire to repel boarders. Some ships do sail with armed guards, but their small-calibre weapons would be hard put to stop a reinforced drone boat whipping across the waves, according to Mr Crino.

Coastal infrastructure is also at risk. Six of the recorded Houthi assaults were on civilian ports and oil terminals. One of these caused "significant damage" to a Singaporean tanker, according to America's State Department. If confirmed as the work of a boat drone, Ukraine's attack on Novorossiysk would be ample proof that any waterfront structure, no matter how heavily secured, could be a target.

Not having a crew gives USVs other advantages. With no need for a cabin, they can be built for stealth. The Ukrainian boat rises only a few centimetres above the water's surface, making it almost invisible to radar and cameras—but, unlike a submarine drone, still able to keep in radio contact with its controllers. (Radio waves cannot penetrate water.) This does not mean a follow-up could not dive completely underwater, for example in order to evade detection on a final attack run, like a German U-boat. The Hamas subs, which are guided on the surface by GPS, might already operate on a similar principle.

Skipping the crew also means vessels can be used more brazenly. A group planning a kamikaze-style maritime attack can avoid relying on a human "who may lose their nerve at the last second", as Scott Savitz, a senior engineer at the RAND Corporation, puts it. In the footage from the attack on Sevastopol, the drone charges through a hail of gunfire with gay abandon.



Keeping a look-out

How, then, do you stop a USV? The immediate response has been to rejig existing weapons. A couple of years ago Thales, a French armaments firm, thus reconfigured its supersonic Martlet missile to hit small fast-moving surface vessels. The result will be fitted to British frigates in 2024. America's navy also recently put the finishing touches to what it calls a "Surface Warfare Mission Package", consisting of two 30mm guns, two rigid-hull inflatable boats and a helicopter. This, it says, is specifically geared toward picking off small fast-moving boats, both crewed and uncrewed.

Moving beyond such lash-ups, both America and Britain have toyed with lasers which they claim could do the job. But it is unclear whether that technology is ready. The American test, aboard the *USS Portland* in the Gulf of Aden, was against a stationary target. Those British tests so far disclosed have taken place on land.

A popular technique for bringing down aerial drones is to jam their radio links with high-intensity electromagnetic chatter, or to wrest control of the craft itself through a technique known as "spoofing". This might work for USVs, too—though countermeasures, in the form of encrypted links and increased autonomy, are becoming increasingly effective, says Mr Crino.

I contain multitudes

Another proposal, albeit so far imaginary, is to fight drone with drone. A retinue of uncrewed air and sea vehicles could serve as "scouts and bodyguards", as Mr Savitz puts it, to scan the horizon for incoming USVs and attack them if needed. In June, Britain's defence ministry awarded an urgent contract to BAE Systems, another armaments company, for an aerial-reconnaissance drone to deploy aboard frigates "to counter unmanned surface vessels". (A spokesman noted that the navy is working to address "new threats across a range of environments", but declined to provide specific details on any of its counter-drone boat efforts.)

As is often the case when a new threat emerges from the technological shadows, armed forces will also look for answers in unusual places. First-world-war-style indicator nets for ensnaring submersible and semi-submersible craft could see a return to service. And Mr Savitz points to an American programme, inspired by the defensive secretions of hagfish, to develop a slime that could be used to gunk up the propellers of incoming USVs.

But no amount of firepower, nor tide of gloop, is likely to be a satisfactory response

on its own. "By the time you're getting into the range of a point defence system," says Craig Allen, a commander in America's coast guard, "it's pretty late in the game to try and stop something." Early detection will thus be crucial—though Mr Crino notes this could be hard in congested areas, such as ports or busy shipping lanes.

Also, these measures assume drone boats will come as single spies. More likely, they will arrive as battalions. "Truthfully it's pretty hard to stop one hostile incoming target," says Mr Allen, "and every additional target you add to that makes the problem much more complicated."

All the more so if a flotilla's boats can collaborate without reference to human beings. This is not a distant prospect. Such swarming capabilities have been under development in the West for a while and are beginning to proliferate. Aselsan, a Turkish arms-maker, recently unveiled the Albatross-s, a speedy USV which, it says, can operate in droves that share information about targets and objectives. Meanwhile, engineers at China's College of Weaponry Engineering in Wuhan are building "hunting algorithms" intended to enable swarms of USVs to chase down a multitude of targets, in the manner of a pod of killer whales pursuing a bob of seals. Good luck stopping those with a net. ■

Neuroscience

Silent synapses

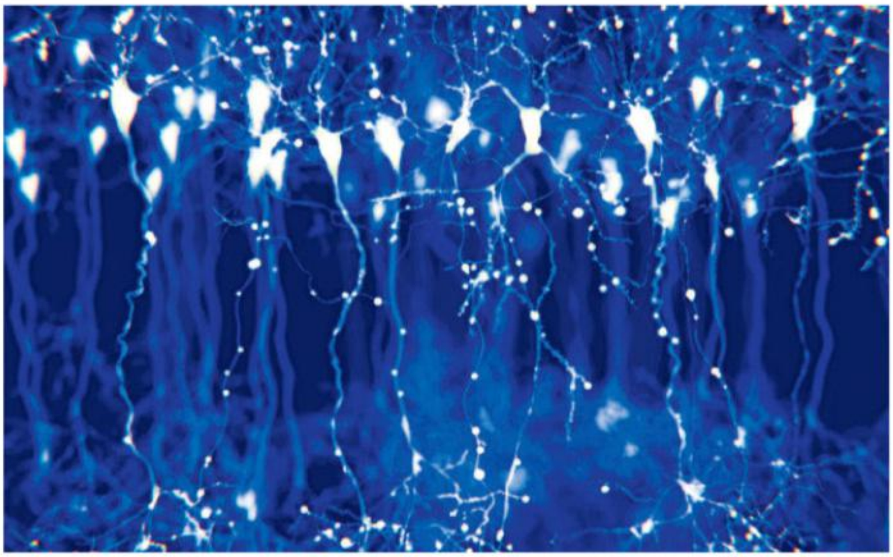
How adult brains learn the new without forgetting the old

Learning new things is hard. Remembering what has already been learned is harder. Any successful learning system, be it a brain or a piece of artificial-intelligence software, must strike the right balance between stability and flexibility. It must be stable enough to remember important old things yet flexible enough to learn new ones without destroying old memory traces—preferably for as long as it exists.

Learning is a result of changes in the pattern of neural connectivity in the brain. Each connection between nerve cells, called a synapse, is a tiny gap between the ends of branches ramifying from such cells. Messages jump across these gaps in the form of molecules called neurotransmitters. Current estimates suggest there are 600 trillion synapses in a human brain.

How, then, to deal with the stability-plasticity dilemma—particularly as brains age and, as it were, fill up? Research by Dimitra Vardalaki, Kwanghun Chung and Mark Harnett at the Massachusetts Institute of Technology, just published in *Nature*, suggests one way is to preserve into adulthood a type of memory-forming synapse found in children. These are called silent synapses.

Silent synapses—which, as their name suggests, transmit no signal from one nerve cell to another—are often found on the ends of slender, immature protrusions from nerve cells, called filopodia. Until now, it had been thought that these disappeared as a brain matured. But Drs Vardalaki, Chung and Harnett have shown not only that they are present in adulthood, but also that they are common, at least in mice. Just over a quarter of the connections they sampled in adult mouse visual cortices were silent synapses on filopodia. And murine and human brains are sufficiently alike that something similar almost certainly applies to people.



Pyramids of potential

To carry out their search for filopodia, the trio used a sensitive microscopy technique called eMAP. They studied 2,234 synapses between cortical nerve cells of a type called pyramidal neurons (pictured), which have thousands of synapses each. Peering through an eMAP microscope is enough to determine which cellular protrusions are filopodia. But it cannot show which synapses on them are silent.

To do that, they needed to test how the filopodia responded to glutamate, the brain's main excitatory neurotransmitter. First, they had to deliver a controlled flow of glutamate to the particular synapse they wanted to test. To this end, they poured a soup of "caged" glutamate over the neuron under examination. This form of the molecule is inert until hit with energy from the intersection of two laser beams.

Aiming those at the synapse under study enabled them to uncage the neurotransmitter and see, by measuring the electrical activity in that part of the neuron using an ultrafine electrode, whether the synapse responded. They found that mature pyramidal-neuron protrusions generated electrical activity when exposed to glutamate, as expected. Filopodia did not, confirming the silence of their synapses.

Silent synapses are, however, useless unless they can be switched on at the appropriate moment. And the researchers confirmed this is possible. They were able to induce the silent versions on filopodia to turn into mature, active synapses by pairing the simulated release of glutamate with a subsequent surge of electricity inside the neuron.

This pairing of events caused silent synapses to start, within minutes, displaying receptor molecules characteristic of active synapses. The same pairing, applied to mature synapses, did nothing. The researchers thereby show it is hard to get a mature synapse to change the strength of its connection (thus satisfying the stability side of the dilemma), but easy to unsilence a silent one (satisfying the plasticity side).

The next thing to investigate is how, why and when new filopodia appear. The discovery of all these eager-to-learn silent synapses and filopodia, Dr Harnett says, "is a lever for us to get into understanding learning in adults and how potentially we can get access to make it not degrade over the course of ageing or disease". ■

Palaeontology

Join the club

A new explanation for ankylosaurs' weaponised tails

Few dinosaurs evoke images of dramatic battle better than *Ankylosaurus*. This seven-metre-long late-Cretaceous herbivore, shielded by thick bony plates and armed with a club at the end of its tail, has been depicted for decades using its weapon to batter the likes of *Tyrannosaurus*. No doubt it did, if need arose. But a paper in *Biology Letters* by Victoria Arbour of the Royal British Columbia Museum, in Victoria, Canada, suggests this was not a club's main purpose. That, she and her colleagues reckon, was to bash other ankylosaurs.

Ankylosaurs came in many species. *Anklyosaurus* itself was merely the first to be discovered. In 2017 Dr Arbour and her team found yet another. They called it *Zuul crurivastator*. Zuul was a demon in "Ghostbusters", a film from the 1980s. This demon's head, they thought, resembled that of their find. "Crurivastator" means "destroyer of shins"—for back then, Dr Arbour accepted conventional wisdom that tail-clubs were for bashing the legs of predators.

But a closer look raised doubts. The fossil is spectacularly preserved, which let the team study its armoured plates in detail. Many of those on its flanks show signs of injury. Plates on most of the rest of the body do not. Nor was this flank-damage from the piercing teeth or slashing claws of predators. Rather, it was the result of being hit by something hard and heavy. On top of this, the damaged plates had healed to different degrees, indicating not only that the bashing had not been lethal, but also that it had happened numerous times.

All this suggests ankylosaurs used their clubs to hit one another, did so frequently, and that (because of the local nature of the damage) such fights had a ritual quality to them—like contests between modern-day bison, rams and red deer. Those fights are over mates, which is what Dr Arbour suggests was also going on with ankylosaurs.

There is a wrinkle. Sexually selected weapons are generally restricted to males, and it is impossible to tell a dinosaur's sex from its fossilised remains. To add to the confusion, many of the 20-25 seriously large ankylosaur tail-clubs that have been found were discovered detached from the rest of the animal. When the assumption was that clubs were for defence, it was logical to assume also that both sexes were thus armed. Now, the question is open.

In modern animals, if females are armed like males it is usually to protect resources rather than garner mates. This is why, among deer, only reindeer sport antlers regardless of sex. Females' antlers are smaller than males', and, unlike males', are retained over winter. Their purpose is to aid defence of patches of ground their wearers have cleared of snow to reach the lichen beneath, at a time when they are pregnant and in need of good nutrition. Female cattle are likewise armed with horns which, though not as big as a bull's, are sufficient to defend their feeding territories.

Whether something similar pertained to ankylosaurs is difficult to determine from the existing evidence. But, either way, the image of the sturdy ankylosaur defending itself fiercely against the unwanted attention of predators is probably the exception. Rather, males were beating up other males—and, possibly, females other females. Not quite such a heroic picture. ■



You want bovver?

The origin of lager

Cheers!

A lucky find by a student in Ireland plugs a gap in the history of lager

In 2011 one mystery in the history of brewing was replaced by another. The solved mystery was where the specialised yeast needed to make lager came from. The new one was how it had got to lager's *fons et origo*, southern Germany—for the yeast in question had been found in Patagonia.

Lager seems to have originated sometime around the 15th century. Before that, all European beers were ales. The difference is that lager ferments and ages best in cool conditions, so requires *Saccharomyces pastorianus*, a cold-tolerant yeast species, for its production. Ales ferment nearer to room temperature. That needs a different yeast, *S. cerevisiae*, other versions of which are used by bakers to leaven bread.

S. pastorianus is itself, however, a hybrid of *S. cerevisiae* and something else. It was that something which turned up in 2011, in the shape of *S. eubayanus*, discovered by Todd Hittinger of the University of Wisconsin-Madison and Diego Libkind of the Argentine National Council for Scientific and Technical Research. And that raised the intriguing question of how this fungus had travelled from what eventually became Argentina to central Europe before Christopher Columbus's first voyage to the Americas in 1492.

Seek and ye shall find. Since its initial discovery, *S. eubayanus* has turned up elsewhere. Though its phylogenetic tree shows that it did indeed originate in Patagonia (its preference for the cold being, perhaps, an adaptation promoting its survival there through the last Ice Age), it has also been found in North America, China and New Zealand—spread, presumably, by natural processes like blowing in the wind, or hitching rides on migrating birds and insects.

But it had not been seen in Europe—at least, not until Stephen Allen, a student at University College, Dublin, collected samples of yeast from a wooded area of one of the college's campuses as part of an undergraduate research project, cultured them, and did a preliminary genetic analysis.

When the results came back, Geraldine Butler, his supervisor at the school of biomolecular and biomedical science, thought she saw *S. eubayanus*'s elusive signature. "I had a hard time convincing the other staff that we might have *eubayanus*, it seemed so unlikely," she says. But a full genetic sequence confirmed it. Dr Butler, Mr Allen and their colleagues published the discovery this week in *FEMS Yeast Research*.

Dr Butler says the analysis shows modern lager yeast is indeed closely related to the Irish strain, and also to a previously discovered Tibetan version. The hare set running in 2011 has not quite been caught. Neither the Irish nor the Tibetan strain is close enough to be the direct parent of lager yeast. But the hunt has now, at least, been brought to Europe. The game's afoot.



Our books of the year

The good books

The best books of 2022 tackled subjects including Hong Kong, financial scandals, the Holocaust and cell theory

Politics and current affairs

The Impossible City. By Karen Cheung. *Random House; 319 pages; $28 and £23*
An illuminating and moving personal account of how Hong Kong descended into the mass street unrest of 2019, and of the pandemic-abetted repression that has crushed it since. The author speaks powerfully for a desperate generation of young Hong Kongers conscious that their home city has lost what made it home.

There Are No Accidents. By Jessie Singer. *Simon & Schuster; 352 pages; $27.99*
A look at why Americans are so much more likely to suffer violent "accidents" than people in other rich countries. The author shows how poor road design, rather than bad driving, explains the persistence of car crashes and how factories use rule books and disciplinary procedures as a cheap substitute for real safety improvements.

Confidence Man. By Maggie Haberman. *Penguin Press; 608 pages; $32. Mudlark; £25*
A chronicle of the life and lies of the 45th president of the United States, from outer-borough brat to White House bully. This portrait of a master scammer is by a *New York Times* journalist who covered Donald Trump for decades. He learned early, she notes, that celebrity was power.

We Have Tired of Violence. By Matt Easton. *New Press; 341 pages; $27.99*
A meticulous narration of the efforts to bring to justice the killers of Munir, a prominent Indonesian human-rights activist murdered in 2004. It reads like an enthralling legal-procedural whodunnit, as evidence is slowly unearthed from telephone records, lost documents are retrieved from deleted computer files and intriguing new witnesses emerge.

→ Also in this section
75 Books by our writers

The Naked Don't Fear the Water. By Matthieu Aikins. *Harper; 336 pages; $27.99. Fitzcarraldo Editions; £12.99*
In 2016 the author, a Canadian journalist, went undercover to accompany an Afghan friend on his perilous journey to a new life in Europe—always knowing that, if push came to shove, he could fall back on his Western citizenship, while his friend would have to rely on his luck. The result is a devastatingly intimate insight into the refugee crisis.

The Age of the Strongman. By Gideon Rachman. *Other Press; 288 pages; $27.99. Bodley Head; £20*
It is striking how many of today's leaders fit the strongman mould, notes a columnist for the *Financial Times* (formerly of *The Economist*). His subjects, including Xi Jinping and Prince Muhammad bin Salman, are a threat not only to the well-being of their own countries, he says, but to a world order in which liberal ideas are increasingly embattled.

The Economic Weapon. By Nicholas Mulder. *Yale University Press; 448 pages; $32.50 and £25*
A fortuitously timed history of the use of economic sanctions during the interwar period of the 20th century. Their mixed success cautions against hoping that the West's sanctions against Russia can bring about an end to war in Ukraine. ▸▸

Business and economics

Money Men. By Dan McCrum. *Bantam Press; 352 pages; £20*
The dramatic story of the demise of Wirecard, once one of Europe's brightest tech stars. The author, a journalist at the *Financial Times*, was one of a small band of sceptics who believed the firm was a giant fraud. Faced with a vicious counter-attack from the company and its spies, and the German establishment's reluctance to accept a national champion could be a sham, they had a long wait for vindication.

Chip War. By Chris Miller. *Scribner; 464 pages; $30. Simon & Schuster; £20*
Semiconductors are central to modern life—they power everything from advanced weapons systems to toasters—but the supply chain is alarmingly fragile. Many countries see chips as a strategic asset. This timely book shows how economic, geopolitical and technological forces shaped an essential industry.

Dead in the Water. By Matthew Campbell and Kit Chellel. *Portfolio; 288 pages; $27. Atlantic Books; £18.99*
Books about merchant shipping are rarely so gripping, but this one looks at what really happened when pirates attacked the *Brillante Virtuoso* in the Gulf of Aden in 2011. A startling tale of fraud and impunity.

The Power Law. By Sebastian Mallaby. *Penguin Press; 496 pages; $30. Allen Lane; £25*
Venture capitalists are often accused of prioritising growth at all costs, so feeding a recklessly aggressive capitalist culture. In this authoritative book a former journalist at *The Economist*—and husband of the current editor-in-chief—acknowledges the industry's shortcomings but eloquently defends its achievements.

For Profit. By William Magnuson. *Basic Books; 368 pages; $32 and £25*
A magnificent history of corporations, stretching from the *societas publicanorum* of ancient Rome, through Renaissance Florence, the Age of Discovery and the might of American industrial capitalism to Silicon Valley. Private enterprises have produced some of humankind's greatest achievements. But often the most dazzling overstep the mark, leaving a trail of debris and distrust behind them.

Butler to the World. By Oliver Bullough. *St Martin's Press; 288 pages; $28.99. Profile Books; £20*
After making a decision to attract footloose international capital after the second world war, Britain went on to roll out the welcome mat for plutocrats and oligarchs. This is an indictment of the lawyers, PR firms and others who help siphon dirty money through London's banks and property market.

Slouching Towards Utopia. By J. Bradford DeLong. *Basic Books; 624 pages; $35 and £30*
Written with wit, style and a formidable command of detail, this book places the successes and disasters of the 20th century in their economic context. In doing so, it provides insights into how things have gone wrong in more recent years—and what must go right if catastrophe is to be avoided in the current century.

Power Failure. By William Cohan. *Portfolio; 816 pages; $40. Allen Lane; £35*
A monumental study of the firm founded in 1892 as the General Electric Company. Its story makes clear how important brilliant people are to business success—and how their brilliance can sometimes become a dangerous vulnerability.

Biography and memoir

The Escape Artist. By Jonathan Freedland. *Harper; 400 pages; $28.99. John Murray; £20*
In 1944 Rudolf Vrba escaped from Auschwitz and helped produce a report on its genocidal horrors. Reluctant as some were to face the truth of the death camps, his bravery and tenacity saved many lives. This harrowing and astonishing story is told with pace and verve, and is an important addition to Holocaust historiography.



The Facemaker. By Lindsey Fitzharris. *Farrar, Straus and Giroux; 336 pages; $23.99. Allen Lane; £20*
An account of the pioneering work done by Harold Gillies in the early 20th century at specialist maxillofacial units in Britain. An engaging biography of a masterful plastic surgeon, it is also a heartening tribute to medical progress.

Agatha Christie. By Lucy Worsley. *Pegasus Crime; 432 pages; $29.95. Hodder & Stoughton; £25*
On December 3rd 1926 the famous novelist left her husband and young daughter and went missing for 11 days. That mysterious disappearance is at the heart of this colourful new biography, which pieces together what really happened that winter.

The Huxleys. By Alison Bashford. *University of Chicago Press; 576 pages; $30. Published in Britain as "An Intimate History of Evolution"; Allen Lane; £30*
Julian Huxley and Thomas Henry Huxley, his grandfather, were both acolytes of Darwinism. They shared a scientific genius, an appetite for culture (both were keen poets) and a tragic tint of mental instability. Both lives are painstakingly illuminated in this double biography.

Inventor of the Future. By Alec Nevala-Lee. *Dey Street Books; 672 pages; $35 and £25*
Buckminster Fuller was a path-breaking American architect and engineer. This portrait gives him his due as a stunningly original thinker and prophet of technology. He comes alive as a visionary who rose above his imperfections to labour for the benefit of humankind.

Hayek. By Bruce Caldwell and Hansjoerg Klausinger. *University of Chicago Press; 824 pages; $50 and £35*
An elegant account of one of the most interesting figures in 20th-century economics. It is packed with great anecdotes and punctures myths about the Austrian-British economist. Mostly it confirms the view that he was a rather strange man, and not always a very nice one.

History

Budapest. By Victor Sebestyen. *W&N; 432 pages; £25*
Forever caught between East and West, the capital of Hungary encapsulates the drama of central Europe in its wonders and horrors. The author, who left the city as a child after the uprising against communist rule in 1956, excels in describing Budapest's Habsburg heyday, the histo-

rical role of its Jewish population and the hubris and humiliations that have helped shape the city.

The Siege of Loyalty House. By Jessie Childs. *Bodley Head; 318 pages; £25*
The broad subject of this poignant book is what happens to people during civil war: how quickly and imperceptibly order becomes chaos and decency yields to cruelty. In other words, how close to inhumanity humanity always is. The focus is on an episode in the English civil war, but the story is timeless.

The Serpent Coiled in Naples. By Marius Kociejowski. *University of Chicago Press; 506 pages; $27.95. Haus Publishing; £20*
To write about Naples, you really need to be a poet—or, even better, an antiquarian bookseller. This author is both and has produced a delightful work that is as eclectic, labyrinthine, ironic and shocking as the great Italian city itself.

A Pipeline Runs Through It. By Keith Fisher. *Allen Lane; 768 pages; £35*
A sprawling, scrupulously researched history of oil from the Palaeolithic era to the first world war. Black gold has been as much a curse as a blessing for the people on whose land it has been found. A compelling read and an immensely valuable guide to a great and terrible industry.

The World: A Family History. By Simon Sebag Montefiore. *W&N; 1,344 pages; £35. To be published in America by Knopf in May; $45*
Don't be put off by the doorstopper length: this history of the world, told through the stories of eminent families, is a riveting page-turner. The author brings his cast of dynastic titans, rogues and psychopaths to life with pithy, witty pen portraits, ladling on the sex and violence. An epic that both entertains and informs.

Fiction

The Candy House. By Jennifer Egan. *Scribner; 323 pages; $28. Little, Brown; £20*
A novel about what humans lose in offering up their private lives to algorithms that mine them for profit. For all its fluency in the languages of gaming, addiction and tech, this is a social novel with numerous characters and perspectives; a kind of 21st-century "Middlemarch".

Maror. By Lavie Tidhar. *Head of Zeus; 560 pages; £20*
Corruption, drugs and assassination feature in this wildly ambitious saga set over four decades in Israel from the early 1970s. It is loosely organised around a series of murders on a coastal road and the career of a crooked cop, but takes detours to Lebanon, Los Angeles, Colombia and Cancún. A caustic alternative history of the dream and development of Israel.



Still Born. By Guadalupe Nettel. Translated by Rosalind Harvey. *Fitzcarraldo Editions; 200 pages; £12.99. To be published in America by Bloomsbury in August; $26.99*
A novel about the choices women make over whether to have children, and what happens if their offspring turn out differently from how they expected. An unsentimental and tightly plotted story.

The Trees. By Percival Everett. *Graywolf Press; 320 pages; $16. Influx Press; £9.99*
Someone is murdering white people in Money, Mississippi. A mutilated black body is found at the crime scenes but keeps disappearing. At first the victims are connected to the lynching of Emmett Till in the neighbourhood in 1955; but then the circle of comeuppance widens. Two wise-cracking detectives head down to investigate. A bitingly funny, boldly satirical, deadly serious tale of racism and the legacy of injustice.

Small Things Like These. By Claire Keegan. *Grove Press; 128 pages; $20. Faber; £10*
In the lead-up to Christmas in 1985, Bill Furlong, a coal and timber merchant, is making deliveries in his small Irish town. His mind is on his unsettled childhood and festive arrangements for his own offspring—until he comes across a distressed girl, locked up in one of the country's Magdalene laundries (ie, homes for "fallen women"). A haunting short book with a quiet, ordinary hero at its heart.

When We Were Birds. By Ayanna Lloyd Banwo. *Doubleday; 304 pages; $27. Hamish Hamilton; £14.99*
Set in Trinidad, this debut novel tells of the separate struggles and twinned destinies of two characters from contrasting walks of life. What looks set to be a simple tale of boy meets girl soon develops into a thoroughly original and emotionally rich examination of love, grief and inheritance.

Culture and ideas

Of Boys and Men. By Richard Reeves. *Brookings Institution Press; 256 pages; $28.99. Swift Press; £20*
In some ways the world remains male-dominated, yet many men are falling behind, says the author. Boys do worse than girls in school in many countries, and are more likely everywhere to end up in prison or kill themselves. He suggests practical, incremental reforms, such as having boys start school a year later.

Life is Hard. By Kieran Setiya. *Riverhead Books; 240 pages; $27. Hutchinson Heinemann; £16.99*
A professor of philosophy at MIT argues that suffering need not diminish or spoil a good life. Living well and hardship can go together, he says; clear thinking is the key. A humane, consoling guide to this vale of tears, with a glimmer of hope.

The Subplot. By Megan Walsh. *Columbia Global Reports; 133 pages; $16 and £11.99*
China's modern literary landscape teems with corruption exposés, homoerotic fantasy, emotive migrant-worker poetry,

time-travelling entrepreneurs and desolately radical science fiction. The author makes a powerful case for Anglophone readers who want to understand China to look past the headlines and turn to books.

Papyrus. By Irene Vallejo. Translated by Charlotte Whittle. *Knopf; 464 pages; $35. Hodder & Stoughton; £25*
A lively history of books in the ancient world. The committing of words and stories to papyrus scrolls was, the author says, as disruptive as the internet.

Magnificent Rebels. By Andrea Wulf. *Knopf; 512 pages; $35. John Murray; £25*
An arresting group biography of the "Jena Set", a gang of young German intellectuals who played an outsize part in the movement that came to be known as Romanticism. It reads as if Iris Murdoch had set a novel during an especially muddy phase of German metaphysics.

Science and technology

The Song of the Cell. By Siddhartha Mukherjee. *Scribner; 496 pages; $26.99. Bodley Head; £22*
A *tour d'horizon* of cell theory, by a clinical oncologist and professor of that subject at Columbia University. Cases from the author's own career illustrate the results of both cellular understanding and the lack of it. The result is part history lesson, part biology lesson and part reminder of how science itself actually proceeds.

Elusive. By Frank Close. *Basic Books; 304 pages; $26. Allen Lane; £25*
A compelling account of the long search for the Higgs boson: its existence was predicted in 1964, but it did not show its face to the world until 2012. This is also a biography of Peter Higgs, the shy physicist after whom the particle was named.

An Immense World. By Ed Yong. *Random House; 464 pages; $30. Vintage; £17.99*
Human senses can only perceive a fraction of the energy and information moving through the world. Animals manage much more: some birds can sense magnetic fields, bees can see ultraviolet light and bats perceive their surroundings using sound waves. By examining how such creatures sense their environments, this book lifts the shroud on previously invisible dimensions of the world itself.

Beyond Measure. By James Vincent. *W.W. Norton; 432 pages; $32.50. Faber; £18.99*
Humans are list-makers, this deeply researched history of measurement argues. From Aristotle's "Categories" to the Linnaean taxonomy of biology, people are splitters, not lumpers, forever seeking to parse and quantify the world.

The Equality Machine. By Orly Lobel. *PublicAffairs; 368 pages; $30 and £25*
This author agrees with those who fear artificial intelligence can be biased. But, in a brilliant act of intellectual jiu-jitsu, she argues that the answer is not to slow the technology, but to speed it up to solve those defects and achieve social progress.

This Mortal Coil. By Andrew Doig. *Bloomsbury; 384 pages; $34 and £25*
A biochemist at the University of Manchester provides a surprisingly upbeat history of death—and points to medical marvels that may lie ahead. An empowering story of human ingenuity. ■

Books by our writers

The midnight oil

Our correspondents wrote about economics, sanctions, polling and space travel

Surviving the Daily Grind: Bartleby's Guide to Work. By Philip Coggan. *Profile Books; 208 pages; £14.99. To be published in America by Pegasus Books in July; $26.95*
Our former Bartleby columnist takes a wry look at the changing world of work, covering everything from automation to presenteeism. He skewers corporate jargon and a range of management fads, and proposes various new laws of his own—such as "80% of the time of 80% of people in a meeting is wasted", and "jargon abhors a vacuum".

Backfire. By Agathe Demarais. *Columbia University Press; 304 pages; $30 and £25*
A look at the ripple effects of American sanctions by the global forecasting director of the Economist Intelligence Unit, who used to work for the French Treasury in Russia and Lebanon. It highlights sanctions' unexpected side-effects—and their potential to backfire, as in the case of recent American controls on semiconductor exports to China. "Illuminating", reckoned *International Affairs*; "balanced, fast-paced and often surprising", said the *Wall Street Journal*.



Money in One Lesson. By Gavin Jackson. *Pan Macmillan; 400 pages; $24.95 and £18.99*
One of our economics and finance correspondents answers the important questions on the nature of money and the ways it shapes the world. The book draws on historical examples to dispel myths and show how societies and their citizens have always been entwined with matters of lucre. "A lucid and at times very funny history of money", concluded the *Financial Times*.

Strength In Numbers. By G. Elliott Morris. *W.W. Norton; 224 pages; $28.95 and £21.99*
One of our data journalists reflects on the history of polls, showing how they not only predict the outcomes of elections but improve democracy. Polling, he argues, is a way for citizens to have influence they otherwise would not. "A short, valuable guide", said the *Guardian*. "Political junkies and policy analysts will savour this informative deep dive," thought *Publishers Weekly*.

The Economist Explains: Oddly Informative Matters of Fact that Amaze and Delight. Edited by Tom Standage. *Profile Books; 256 pages; £9.99*
A compendium of the extraordinary quandaries and conundrums, bizarre facts and head-scratchers featured in our popular "*The Economist* Explains" series of articles. The editor of our future-gazing annual, "The World Ahead", collects the mind-stretching answers our journalists wrote to questions such as: How do footballers get their shirt numbers? How do you move a horse from one country to another? What counts as a journey into space?

Economic & financial indicators

Economic data

	Gross domestic product % change on year ago latest		quarter*	2022†	Consumer prices % change on year ago latest		2022†	Unemployment rate %		Current-account balance % of GDP, 2022†	Budget balance % of GDP, 2022†	Interest rates 10-yr gov't bonds latest,%	change on year ago, bp	Currency units per $ Dec 7th	% change on year ago
United States	1.9	Q3	2.9	1.9	7.7	Oct	8.1	3.7	Nov	-3.5	-5.5	3.4	194	-	
China	3.9	Q3	16.5	3.3	2.1	Oct	2.0	5.5	Oct‡§	2.5	-7.1	2.7 §§	-1.0	6.98	-8.7
Japan	1.5	Q3	-0.8	1.5	3.8	Oct	2.5	2.6	Oct	1.9	-6.3	nil	-8.0	137	-16.9
Britain	2.4	Q3	-0.7	4.4	11.1	Oct	8.0	3.6	Aug††	-5.9	-6.6	3.3	253	0.82	-7.3
Canada	3.9	Q3	2.9	3.1	6.9	Oct	6.7	5.1	Nov	1.6	-2.7	2.8	118	1.36	-7.3
Euro area	2.3	Q3	1.3	3.1	10.0	Nov	8.5	6.5	Oct	1.3	-4.2	1.8	214	0.95	-6.3
Austria	1.7	Q3	-13.5	4.8	10.6	Nov	8.8	4.6	Oct	-0.7	-3.5	2.4	249	0.95	-6.3
Belgium	1.9	Q3	0.7	2.2	10.6	Nov	10.0	5.4	Oct	-1.2	-5.2	2.5	248	0.95	-6.3
France	1.0	Q3	0.7	2.4	6.2	Nov	6.0	7.1	Oct	-1.8	-5.4	2.3	235	0.95	-6.3
Germany	1.3	Q3	1.6	1.6	10.0	Nov	8.4	3.0	Oct	4.1	-4.1	1.8	214	0.95	-6.3
Greece	2.1	Q3	-2.1	5.5	9.1	Oct	9.9	11.6	Oct	-6.3	-4.5	3.7	244	0.95	-6.3
Italy	2.6	Q3	1.9	3.7	11.8	Nov	8.6	7.8	Oct	-0.8	-5.7	3.6	269	0.95	-6.3
Netherlands	3.1	Q3	-0.9	4.2	14.3	Oct	12.0	3.7	Oct	6.3	-1.4	2.1	230	0.95	-6.3
Spain	3.8	Q3	1.0	4.4	6.8	Nov	9.2	12.5	Oct	0.2	-5.4	2.9	248	0.95	-6.3
Czech Republic	1.7	Q3	-0.6	2.0	15.1	Oct	15.7	2.3	Oct‡	-3.7	-5.1	4.7	219	23.1	-2.2
Denmark	3.3	Q3	2.1	2.8	10.1	Oct	7.9	2.6	Oct	9.0	0.9	2.0	211	7.08	-6.6
Norway	2.5	Q3	6.3	3.5	7.5	Oct	6.4	3.4	Sep‡‡	18.8	12.2	1.4	76.0	10.0	-9.8
Poland	4.5	Q3	4.1	5.0	17.4	Nov	14.6	5.1	Nov§	-3.3	-3.7	6.5	325	4.47	-8.9
Russia	-4.0	Q3	na	-3.6	12.6	Oct	14.0	3.9	Oct§	12.6	-1.8	10.3	172	62.9	17.6
Sweden	2.6	Q3	2.4	3.0	10.9	Oct	7.9	7.1	Oct§	3.7	-0.5	1.7	158	10.4	-12.0
Switzerland	0.5	Q3	1.0	2.0	3.0	Nov	3.1	2.0	Nov	5.5	-1.0	1.0	125	0.94	-1.1
Turkey	3.9	Q3	-0.5	5.0	84.4	Nov	74.1	9.9	Sep§	-7.8	-3.3	10.5	-997	18.6	-27.2
Australia	5.9	Q3	2.6	3.7	7.3	Q3	6.4	3.4	Oct	2.0	-1.9	3.4	171	1.49	-5.4
Hong Kong	-4.5	Q3	-10.0	-2.4	1.8	Oct	1.9	3.8	Oct‡‡	4.4	-6.4	3.4	189	7.79	0.1
India	6.3	Q3	19.3	7.0	6.8	Oct	6.9	8.0	Nov	-2.5	-6.4	7.3	88.0	82.5	-8.6
Indonesia	5.7	Q3	na	5.0	5.4	Nov	4.5	5.9	Q3§	2.1	-3.9	7.0	63.0	15,638	-8.1
Malaysia	14.2	Q3	na	6.0	4.0	Oct	3.4	3.6	Sep§	1.6	-6.1	4.1	55.0	4.40	-3.9
Pakistan	6.2	2022**	na	6.2	23.8	Nov	18.2	6.3	2021	-4.0	-7.7	13.6 †††	171	224	-20.9
Philippines	7.6	Q3	12.1	7.7	8.0	Nov	5.4	4.5	Q4§	-4.2	-7.8	6.8	182	55.5	-9.2
Singapore	4.1	Q3	4.6	3.5	6.7	Oct	6.1	2.0	Q3	18.8	-1.0	3.0	128	1.36	0.7
South Korea	3.1	Q3	1.3	2.6	5.0	Nov	5.2	2.4	Oct§	1.0	-3.2	3.5	127	1,322	-10.8
Taiwan	4.0	Q3	7.5	3.0	2.3	Nov	3.0	3.6	Oct	14.0	-1.4	1.3	71.0	30.6	-9.4
Thailand	4.5	Q3	5.0	3.2	5.5	Nov	6.1	1.2	Sep§	-1.2	-5.0	2.5	82.0	35.1	-4.0
Argentina	6.9	Q2	4.2	5.0	88.0	Oct	73.8	6.9	Q2§	-0.6	-4.4	na	na	170	-40.3
Brazil	3.6	Q3	1.6	2.7	6.5	Oct	9.3	8.3	Oct§‡‡	-2.4	-5.6	12.8	182	5.22	8.1
Chile	0.3	Q3	-4.6	2.3	13.3	Nov	11.6	8.0	Oct§‡‡	-8.1	-0.3	5.3	-30.0	872	-4.0
Colombia	7.1	Q3	6.4	7.6	12.5	Nov	10.1	9.7	Oct§	-5.6	-4.7	12.6	458	4,824	-19.2
Mexico	4.3	Q3	3.6	2.7	8.4	Oct	7.9	3.2	Oct	-1.0	-2.5	9.0	164	19.8	6.9
Peru	1.7	Q3	1.8	2.7	8.4	Nov	7.8	6.0	Oct§	-3.6	-1.5	7.6	164	3.81	7.1
Egypt	3.3	Q2	na	6.6	16.2	Oct	13.3	7.4	Q3§	-4.6	-7.4	na	na	24.6	-36.2
Israel	7.6	Q3	2.1	5.9	5.1	Oct	4.5	4.1	Oct	2.9	0.3	3.3	239	3.43	-8.8
Saudi Arabia	3.2	2021	na	8.9	3.0	Oct	2.5	5.8	Q2	13.5	3.5	na	na	3.76	-0.3
South Africa	4.1	Q3	6.6	1.9	7.8	Oct	7.0	32.9	Q3§	-1.3	-5.5	10.5	103	17.2	-7.5

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

Markets

In local currency	Index Dec 7th	% change on: one week	% change on: Dec 31st 2021
United States S&P 500	3,933.9	-3.6	-17.5
United States NAScomp	10,958.6	-4.4	-30.0
China Shanghai Comp	3,199.6	1.5	-12.1
China Shenzhen Comp	2,071.0	2.6	-18.1
Japan Nikkei 225	27,686.4	-1.0	-3.8
Japan Topix	1,948.3	-1.9	-2.2
Britain FTSE 100	7,489.2	-1.1	1.4
Canada S&P TSX	19,973.2	-2.3	-5.9
Euro area EURO STOXX 50	3,920.9	-1.1	-8.8
France CAC 40	6,660.6	-1.2	-6.9
Germany DAX*	14,261.2	-0.9	-10.2
Italy FTSE/MIB	24,241.4	-1.5	-11.4
Netherlands AEX	718.3	-0.8	-10.0
Spain IBEX 35	8,290.5	-0.9	-4.9
Poland WIG	55,983.9	-0.1	-19.2
Russia RTS, $ terms	1,098.9	-2.3	-31.1
Switzerland SMI	11,010.0	-1.1	-14.5
Turkey BIST	4,827.0	-3.0	159.8
Australia All Ord.	7,423.2	-0.8	-4.6
Hong Kong Hang Seng	18,814.8	1.2	-19.6
India BSE	62,410.7	-1.1	7.1
Indonesia IDX	6,818.8	-3.7	3.6
Malaysia KLSE	1,466.9	-1.5	-6.4

	index Dec 7th	% change on: one week	% change on: Dec 31st 2021
Pakistan KSE	41,819.3	-1.2	-6.2
Singapore STI	3,225.5	-2.0	3.3
South Korea KOSPI	2,382.8	-3.6	-20.0
Taiwan TWI	14,630.0	-1.7	-19.7
Thailand SET	1,622.3	-0.8	-2.1
Argentina MERV	171,177.9	1.6	105.0
Brazil BVSP	109,068.6	-3.0	4.1
Mexico IPC	50,726.0	-1.9	-4.8
Egypt EGX 30	14,787.1	11.5	24.2
Israel TA-125	1,852.0	-1.7	-10.7
Saudi Arabia Tadawul	10,185.1	-6.5	-10.1
South Africa JSE AS	74,011.1	-1.1	0.4
World, dev'd MSCI	2,654.3	-2.4	-17.9
Emerging markets MSCI	958.8	-1.4	-22.2

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 31st 2021
Investment grade	155	120
High-yield	491	332

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities

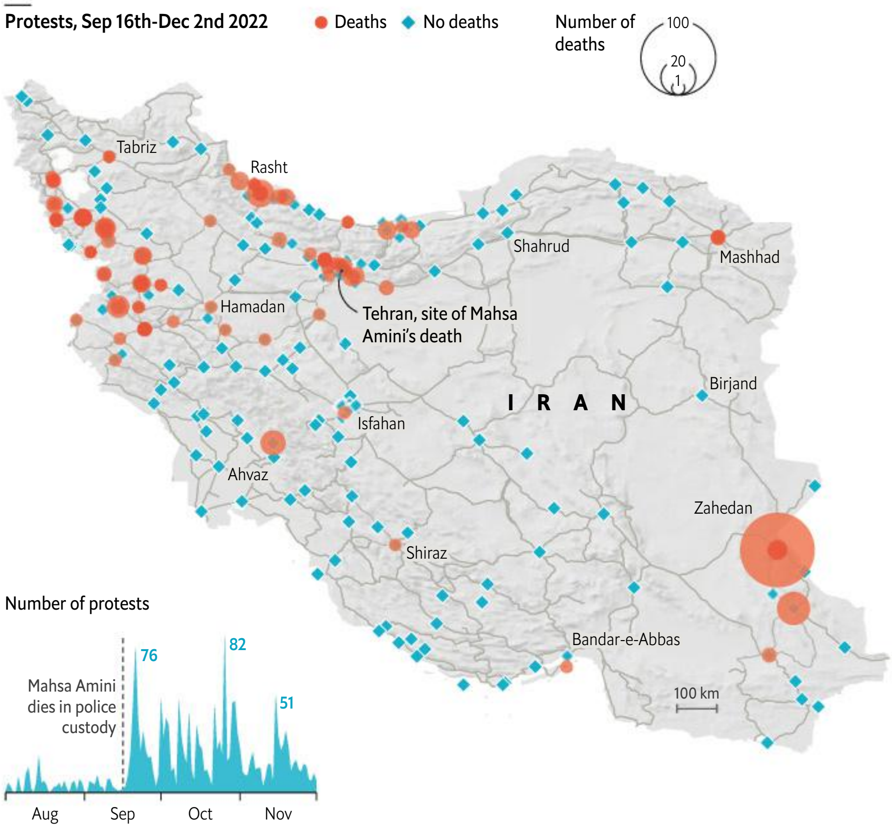
***The Economist* commodity-price index**

2015=100	Nov 29th	Dec 6th*	% change on month	% change on year
Dollar Index				
All Items	147.6	150.2	4.4	-3.5
Food	137.3	133.8	-4.0	-1.7
Industrials				
All	157.3	165.6	11.8	-4.9
Non-food agriculturals	134.9	134.2	-4.4	-13.1
Metals	163.9	174.9	16.3	-2.8
Sterling Index				
All items	187.8	187.6	-1.2	4.4
Euro Index				
All items	158.1	158.6	0.1	3.3
Gold				
$ per oz	1,753.2	1,774.5	4.5	-0.5
Brent				
$ per barrel	83.3	79.6	-16.6	5.4

Sources: Bloomberg; CME Group; Cotlook; Refinitiv Datastream; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

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→ **Demonstrations have erupted in nearly every corner of Iran**



Deadliest episodes of protest recorded by ACLED*
Total within a 90-day period



*Countries with over 10m people and deadly protests on ten or more days. Deadliest episode in movement shown. Data starts between 1997 and 2021, depending on country Sources: ACLED; press reports

Lifting the veil

Protest movements as deadly as Iran's often end in revolution or civil war

BEYOND THEIR remarkable bravery, little is known for certain about the protesters who have thronged Iranian streets in recent months. Amid internet blackouts and harsh repression, external observers seeking to study the demonstrations have to rely on news articles, reports by human-rights groups and social-media posts.

Yet when compiled methodically, even such fragmentary sources can offer clues about the movement's evolution and fate. Since 1997 the Armed Conflict Location and Event Data Project (ACLED), a research group, has collected information on political unrest. Its records cover 1.6m events, like protests or battles, in 130,000 places.

Iran's rulers claim without evidence that foreign governments are behind the unrest. ACLED's data show that the movement is too broad for this to be credible. Protests have persisted for months, and reached all over the country. Although episodes of this scale do not always lead to regime change, they do tend to foreshadow even greater political turmoil. Iran has not seen the degree of unrest that often follows such protests since its revolution in 1979.

The movement began on September 16th, when Mahsa Amini, whom Iran's morality police had arrested for wearing her headscarf "improperly", died in their custody. Iranians flocked to the streets, calling for "women, life, freedom". The government and affiliated thugs responded with force, including gunshots and beatings.

The regime has also suppressed news about the protests, jailing journalists and blocking internet access. Only reports that evade these obstacles enter ACLED's archive, often weeks after events occurred. As a result, its counts of protests and deaths are lower bounds, not final tallies.

The data show that violence peaked early in the uprising. At least one person died in 46 of the 213 protests logged in the first week. The worst event was a march on September 30th, in which protesters sought justice for a girl allegedly raped by a police chief. According to ACLED, police opened fire and killed 97 "marchers and rioters".

Since then, the share of protests recorded as deadly has fallen from 22% to 5%. Reporting delays may account for some of this, and security forces may be exercising more restraint. But the decline in deaths does not mean that the movement is ebbing. Since November 16th ACLED has logged at least one protest every day and a daily average of 16, only slightly below the 23 per day from October 1st to November 15th.

Because ACLED began studying Iran in 2015, its archive does not cover previous episodes of unrest in the country. The current recorded death toll of 322 dwarfs calculations by other sources of fatalities during the Green Movement protests in 2009, at around 30. It is of a similar scale to one estimate of deaths in early 1979, as the overthrow of the shah drew near.

The data also make the protests look relatively bloody when compared with unrest elsewhere. Such analyses are imprecise: the level of detail in ACLED's numbers varies from place to place, and demonstrations differ in scale and danger. However, protests in which people die are relatively rare, and especially likely to be reported.

Among all movements in ACLED's data, the Iranian uprising is the third-worst 90-day period measured by the number of deadly protests, and sixth by total deaths at protests. On a per-person basis, excluding countries with populations below 10m, it ranks eighth in both. This should make Iran's rulers nervous. Among the top ten cases in each category, around half have ended in revolution, coups or civil war. ■



The shadow-lover

Jay Pasachoff, solar astronomer and passionate proselytiser, died on November 20th, aged 79

Since the very beginnings of humankind, solar eclipses have caused terror. The gradual encroaching of the Moon's shadow between the Earth and the Sun was a sign of divine wrath, withdrawing the light that made crops grow and men and women live; it foretold the end of empires and the deaths of kings. Among the ten plagues of Egypt, one was the sudden descent of darkness in the middle of the day. In the modern world, a total eclipse is still a deeply eerie occurrence: a sudden cold darkness in daylight when the birds stop singing and begin to roost, and even know-it-all Westerners feel a strong twinge of disturbance.

Jay Pasachoff's reaction was completely different. To him "the perfect alignment, in solemn darkness, of the celestial bodies that mean most to us" gave a primal thrill that was indescribable. As a self-styled "umbraphile", a shadow-lover, his greatest joy was to stand in that brief darkness cast by the shadow of the Moon. Then, although he had all manner of computers and cameras and, usually, eager student helpers to record the event, he made sure he stole at least some seconds to don his filter-glasses, raise his binoculars and admire the marvel directly, man to star.

He had observed 75 eclipses—totals, partials and annulars, where some sunlight remains as a delicate ring—thereby ranking second in the world. For 50 years, as professor of astronomy at Williams College in Massachusetts and director of its Hopkins Observatory, he saw that as his principal job. It took him all over the place. Every 18 months or so, the usual time-lapse between total eclipses, he would fly off, packing hundreds of pounds of equipment and his orange trousers, and on his return he would be planning the next excursion, scraping funds together, scanning the "paths of totality" across the globe and poring over cloudiness statistics to be sure of an unobscured view. (He became an expert on weather, writing a guide to it, as well as the Sun.) In 1970 he watched from Mexico as the stars and planets came into view in a cloudless daytime sky. In Rajasthan in 1995 he logged a dazzling "diamond-ring" effect, as the last ray of sunlight shone through a valley on the Moon's surface. Near Bucharest in 1999, sunspots at the peak of their 11-year cycle made the Sun's corona bristle with giant streamers.

It was the corona, the outermost layer of the Sun's atmosphere, that most interested him. His love of eclipses was partly because he could study the corona properly while the Sun's disc was dark, noting its flares, its loops of ionised gas and the plumes from the polar regions. With the data he recorded he could try to discover why the corona, one millionth as bright as the disc, was 300 times hotter. Was that heat generated by thousands of constantly erupting nanoflares? Or was it caused by vibrations in the gas loops, which were held in place by the Sun's magnetic field? Both were plausible, but there were at least a dozen other theories around.

The unadventurous wondered why he had to see so many eclipses. (He also studied the much rarer transits across the Sun of Mercury and Venus.) But no two were alike, because the Sun, he explained, was never the same twice. It was like a river, forever changing, not least because it was married to the sunspot cycle. Sceptics also asked why he did not rely on space-based telescopes, with coronagraphs that could block out the Sun's photosphere. But those either hid too much of the corona, or failed to block the disc entirely; and even with 99% of it obscured, the sky would be 10,000 times brighter than in a total eclipse.

Besides, his shadow-loving self was hooked. He had been entranced ever since his visits as a boy to the Hayden Planetarium in New York City, where over the entrance a triptych of paintings by Howard Russell Butler recorded the total eclipses of 1918, 1923 and 1925 as witnessed in America. At 15 he was building a telescope, even grinding and polishing the mirror: an achievement that helped him into Harvard the next year. As a freshman he was taken to view his first eclipse, from a DC-3 plane safely above the rainclouds, off the Massachusetts coast. The corona outlined the Moon in white. There was no turning back from that wonder.

Remembering this, he felt impelled to tell everyone to look up, be inspired, and learn. In Manitoba once, during an eclipse, he watched in disbelief as drivers simply turned their headlights on, but did not stop. People had to notice. Around the Williams campus he would give 20-minute lectures on the next eclipse to anyone who, to his amazement, hadn't heard of it. Almost all his trips included students, his own and others'; often friends and family came too. He wanted not just to train his undergraduates in using spectrographs, but also to fire them as he had been.

The notion of citizen science pleased him greatly. He credited it to Edmund Halley, who in 1715 had asked "the Curious" to "Observe...with all the care they can" the total eclipse over London. Taking that lead, he wrote his many textbooks, field guides and magazine articles in everyday, accessible language. In "The Cosmos", his most comprehensive work, the maths was boxed out and could easily be avoided. When teaching the public about astronomy, he preferred to stress art and history—Renaissance prints of armillary spheres, a comet-sketch by Paul Klee—rather than equations.

His greatest teaching aid, however, was eclipses themselves. In 2017 his moment came, with a path of totality that stretched from Oregon to South Carolina. In the event, 88% of adult Americans watched it either in person or electronically, almost twice as many as had watched the Super Bowl earlier that year. But his focus was on the schoolchildren, millions of them as he hoped, gazing up through their filter-glasses. Several of his own students, to his delight, had gone on to head astronomy departments. How many of those children, enthralled by the creeping Moon-shadow, might do the same?

An even better eclipse was forecast for 2024, with totality from Mexico to the Canadian Maritimes. He wanted everyone to observe it. As for him, he was already plotting hotel reservations in Sinaloa, the place with the best view. ■


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